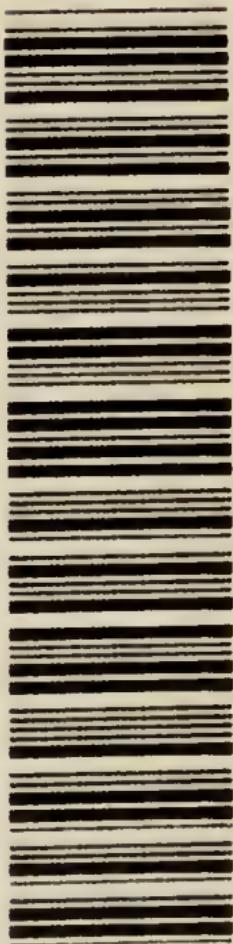


Golden Tales

Stories of Children.

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GOLDEN RULES
FOR DISEASES OF
INFANTS AND CHILDREN.

PUBLISHERS' NOTE.

SPECIAL need having shown itself for fuller treatment in this number of the "Golden Rules" Series, and it having been suggested that increased usefulness would follow the enlargement, the Publishers now issue it with the kind co-operation of the Author, as a double number, price Two Shillings.

Bristol, 1903.

GOLDEN RULES FOR DISEASES OF INFANTS & CHILDREN :

BY

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British Journal of Children's Diseases.*

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PREFACE TO SECOND EDITION.

BUT twenty months have elapsed since the publication of the first edition of *Golden Rules for Diseases of Children*. A large edition has been disposed of in that short time, and the author's hope has been realised "that it would worthily fill its place in the Golden Rules Series."

The present edition has been carefully revised, and the Publishers having acquiesced in my request for the allotment of extra pages, I have been enabled to provide additional matter in the sections devoted to the *Feeding of Infants*, the *Specific Infectious Diseases*, and to *Diseases of the Circulatory, Respiratory, Digestive, Urinary, and Nervous Systems*. The book now traverses a much wider field in the domain of children's diseases than was hitherto possible, and I have added a small section on *Skin Diseases in Childhood*, to make the work more complete.

I hope and anticipate that its usefulness will be increased, and trust that the second edition will prove as popular as the first.

I also beg to be allowed to express my indebtedness to many Reviewers for various kindly and valuable suggestions made with the view of enhancing the usefulness of this little book; and to my medical friends and colleagues, and others, for many useful hints, all of which have been incorporated in the present volume.

GEORGE CARPENTER.

12, WELBECK ST., LONDON, W.

July, 1903.

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Golden Rules for Diseases of Infants and Children.

INTRODUCTORY.

HYGIENE OF INFANTS.

Always examine an infant after its birth for malformations, or injuries, and attend to its eyes. After cleansing the lids instil 2 or 3 drops of a 2 per cent. solution of nitrate of silver.

An infant should **never remain in its cot continuously** in one position. Every few hours it should be taken up and carried about the room.

Do not forget, for an infant to thrive it requires **exercise** for its limbs by kicking, and full expansion of its lungs by crying.

See that the clothing is warm, free from irritating properties, and sufficiently loose to allow perfect freedom of the limbs.

Do not be afraid of fresh air and sunlight. If the weather is fine, and free from E. and N.E. winds, the infant should be taken out of doors as soon after birth as possible for a few minutes, the outing being gradually prolonged.

The nursery should have a **sunny aspect**, be well ventilated day and night, and provided with a thermometer. The food supply and excreta are to be banished from the room. Keep the temperature during the day at 60° F., and at night at 58° F. An infant requires at least 1,000 cubic feet of space for its proper maintenance.

The daily bath for the first six months should be given at a temperature of 98° F., to be subsequently reduced to 95° F., and by the end of the first year to 90° F. If the infant is weakly, turns pale, and becomes blue about the lips, discontinue the tub and substitute washing.

Remember the early education of the rectum and bladder is most important. An infant should be "held out" after feeding, from its birth.

Bear in mind an infant requires, and should take, an **abundance of sleep**. If it is sleepless it is either dyspeptic, or wet

and uncomfortable, and if at the breast it is possibly hungry.

FEEDING OF INFANTS.

Breast feed an infant unless the mother is tuberculous, or otherwise incapacitated. Place it at the breast on the 1st day once in 6 hours, on the 2nd once in 4 hours. If milk is not secreted give a 5 per cent. milk sugar solution occasionally, $\frac{1}{2}$ an oz. at a time. The nursing woman must lead a quiet, healthy life, and not be overfed. If the milk is over-rich the living is too high; reduce the quantity of food, forbid alcohol, and order sufficient out-door exercise. If the milk is poor, forbid nursing and substitute a suitable milk mixture. **Mixed feeding** should be undertaken if the mother's milk is good in quality though poor in quantity. A reliable healthy wet nurse, whose milk suits the infant's digestion, is better than artificial feeding; but a good milk mixture is far superior to an indifferent foster mother.

Remember the influence of the nervous system, drugs, and menstruation on the mother's milk. Be guided as to the time of

weaning by the condition of the infant. When weaning, commence with a milk mixture of low proteids and fat, gradually increasing their strength.

During the first six months of life observe the following percentages:—

| Percentages. | | | Dietary in ounces. | | |
|--------------|--------------|--------|--|-------|--|
| 1. | Fat | - 2.00 | $\left\{ \begin{array}{ll} 20\% \text{ Cream*} & 1.69 \\ \text{Milk} & - - 1.55 \\ \text{Water} & - - 16.76 \\ \text{Milk Sugar} & - - 1.05 \end{array} \right.$ | 1.69 | |
| | Sugar | - 6.00 | | 1.55 | |
| | Proteids | - .60 | | 16.76 | |
| | | | | 1.05 | |
| 2. | Fat | - 2.50 | $\left\{ \begin{array}{ll} 20\% \text{ Cream*} & 2.04 \\ \text{Milk} & - - 2.28 \\ \text{Water} & - - 15.68 \\ \text{Milk Sugar} & - - 1.02 \end{array} \right.$ | 2.04 | |
| | Sugar | - 6.00 | | 2.28 | |
| | Proteids | - .80 | | 15.68 | |
| | | | | 1.02 | |
| 3. | Percentages. | | Dietary in ounces. | | |
| | Fat | - 3.00 | $\left\{ \begin{array}{ll} 20\% \text{ Cream*} & 2.40 \\ \text{Milk} & - - 3.00 \\ \text{Water} & - - 14.60 \\ \text{Milk Sugar} & - - .97 \end{array} \right.$ | 2.40 | |
| | Sugar | - 6.00 | | 3.00 | |
| | Proteids | - 1.00 | | 14.60 | |
| | | | | .97 | |

* 20 per cent. cream = ordinary centrifugal cream; 16 per cent. cream = skimmed cream. Stand milk 12 hours—set over night and skim in the morning. 12 per cent. cream = 20 per cent. cream and milk, equal parts, or skimmed cream from milk standing 6 hours.

| | | | | |
|----|----------|---|------|---|
| 4. | Fat | - | 3.50 | $\left\{ \begin{array}{lll} 16\% \text{ Cream}^* & 2.79 \\ \text{Milk} & - & 3.52 \\ \text{Water} & - & 13.69 \\ \text{Milk Sugar} & - & .92 \end{array} \right.$ |
| | Sugar | - | 6.00 | |
| | Proteids | - | 1.20 | |
| | | | | |
| 5. | Fat | - | 4.00 | $\left\{ \begin{array}{lll} 16\% \text{ Cream}^* & 4.42 \\ \text{Milk} & - & 2.42 \\ \text{Water} & - & 13.16 \\ \text{Milk Sugar} & - & .90 \end{array} \right.$ |
| | Sugar | - | 6.00 | |
| | Proteids | - | 1.30 | |
| | | | | |

From the sixth to the ninth month of life
give :—

| | Percentages. | | Dietary in ounces. |
|----|--------------|---|--------------------|
| 6. | Fat | - | 4.00 |
| | Sugar | - | 7.00 |
| | Proteids | - | 2.00 |
| | | | |
| | | | |

From the ninth to the twelfth month of life give :—

| | Percentages. | | Dietary in ounces. |
|----|--------------|---|--------------------|
| 7. | Fat | - | 4.00 |
| | Sugar | - | 6.00 |
| | Proteids | - | 2.50 |
| | | | |
| | | | |

The first feeding should be given at 5 a.m., the last at 11 p.m. During the 1st week feed every 2 hours, 1 oz. each time; during the 1st month every $2\frac{1}{2}$ hours, quantity 2 to 3 ozs.; during the 2nd month every $2\frac{1}{2}$ hours, quantity 3 to 4 ozs.; during the 3rd and 4th months every 3 hours, quantity 4 to 5 ozs.; during the 5th and 6th months every 3 hours (6 feeds) quantity 5 to 6 ozs.

Remember the greater the weight the greater the gastric capacity. An unusually fine child may require more food than has been suggested at the corresponding age, and *vice versa*. From the 6th to the 9th month the quantity should be gradually increased to two pints, and from the 9th to 12th month to 45 ozs.

If a healthy infant is not gaining in weight, and there is no dyspepsia, increase the proportions of all the ingredients. If there is vomiting, or regurgitation soon after feeding, reduce the quantity of the fluid. If there is **constant stomach-ache** and curds in the motions, reduce the proteids. If vomiting frequently occurs an hour or two after food reduce the fat, and if that fails the proteids. For **chronic constipation** increase the quantity of fat—it should not exceed 4 per cent. during the

first 6 months—and proteids. If proteid digestion is very difficult, still further reduce the percentage, and if necessary peptonize. Peptonizing must not be continued for more than a few weeks. If the proteids have been greatly reduced, and the infant though digesting is not thriving, commence with a teaspoonful of beef juice to each bottle and gradually increase the dose.*

When proteid (casein) digestion is very difficult the early months of life can often be tided over by using **whey**, and increasing thereby the relative proportion of the **Lactalbumin** to the **Caseinogen**. In human milk the proportion is $\frac{2}{3}$ of the former to $\frac{1}{3}$ of the latter, and in cow's milk the lactalbumin is $\frac{1}{6}$ to $\frac{5}{6}$ caseinogen. When prescribing, the human standard can be attained or improved, but in **home modifications** where less percentages of cream must be used, small percentages of proteids are obtained at the expense of the fat, as shown in the accompanying table.

After treating whole milk with rennet or Liquor Pancreaticus, heat the whey to 150° F. for five minutes to destroy the

* 1 lb. finely chopped beef, water 8 oz., a pinch of salt, stand on ice 12 hours and strain through muslin

enzyme, as this will coagulate the caseinogen in the cream, which is to be subsequently added to the whey.

| Quantity of <i>Cream</i> in ozs to be added to <i>Whey</i> up to one pint. | Percen- tage of mixed Proteids in the Mixture. | Percen- tage of Fat in the Mixture. | Relative proportion of Lactalbumin and Caseinogen in a pint of the Mixture. | |
|--|---|---|---|------------------|
| | | | Lactal- bumin. | Casein- ogen. |
| 20 per ct. cream | | | | |
| 0·70 | 0·94 | 1·00 | 16·59 | 2·24 |
| 1·71 | 1·06 | 2·00 | 15·72 | 5·47 |
| 2·72 | 1·18 | 3·00 | 14·86 | 8·70 |
| 3·74 | 1·30 | 4·00 | 13·98 | 11·96 |
| 16 per ct. cream | | | | |
| 0·87 | 0·98 | 1·00 | 16·45 | 3·13 |
| 2·14 | 1·15 | 2·00 | 15·35 | 8·70 |
| 3·42 | 1·32 | 3·00 | 14·25 | 13·31 |
| 4·69 | 1·50 | 4·00 | 14·16 | 16·88 |
| 12 per ct. cream | | | | |
| 1·16 | 1·03 | 1·00 | 17·20 | 4·46 |
| 2·88 | 1·28 | 2·00 | 14·62 | 10·94 |
| 4·59 | 1·53 | 3·00 | 13·25 | 17·44 |
| 6·30 | 1·79 | 4·00 | 11·78 | 23·94 |

The addition of 2 drachms of milk sugar to each pint of the mixture will bring the percentage of sugar to about 6 per cent. The sugar must be added to the hot whey.

Remember that home-made mixtures can only aim at accuracy, they cannot attain it, though they may approach it, and that the utmost care and cleanliness must be exercised during the necessary manipulations of the ingredients.

Use cylindrical bottles with wide mouths —such as supplied by the Walker Gordon Co. with their milk.† Scrupulous cleanliness must be observed in the care of teats and feeding bottles. Each feeding must be undertaken personally by the nurse, and should not exceed 20 minutes. All bolting of food must be checked. It is not necessary to pasteurise or sterilise the milk during the winter months. Keep it in a suitable place—not in the bedroom or outside the bedroom door. Do not commence cereals until the 7th month. Begin with the proportion of one table-spoonful of barley-meal or oatmeal, or whole meal mixed cereals to a pint. Thoroughly cook the cereals.

† Milk prescriptions are dispensed by the Walker Gordon Co., 79, Duke St., W.

From the 12th to the 18th month the diet should be a milk and farinaceous one mainly. Give 5 meals daily. For the mid-day meal from 1 to 3 ozs. of red gravy, or beef juice, or beef soup, or a lightly boiled egg. It is better to keep the milk proteids from 3 to 3·50 per cent, the fat at 4 per cent, and the milk sugar 5 per cent. Some children can digest undiluted cow's milk.

From the twelfth to the eighteenth month of life give :—

| Percentages. | | | Dietary in ounces. | |
|--------------|----------|--------|--------------------|-------|
| 8. | Fat | - 4·00 | { 12% Cream* | 2·31 |
| | Sugar | - 5·00 | Milk - - | 13·07 |
| | Proteids | - 3·00 | Water - - | 4·62 |
| | | | Milk Sugar - - | ·32 |
| 9. | Fat | - 4·00 | { 12% Cream* | 1·03 |
| | Sugar | - 5·00 | Milk - - | 16·91 |
| | Proteids | - 3·50 | Water - - | 2·05 |
| | | | Milk Sugar - - | ·21 |

After 18 months, in addition to cow's milk and farinaceous foods, when the first back teeth are cut, a table-spoonful of fish, or fowl, pounded to commence, and later the same quantity of underdone chop or steak, should be given at dinner time. Baked

* See note, p. 14.

apples, sieved stewed prunes, and well-cooked green vegetables free from fibre, are also necessary.

WEIGHT.

Infants should be weighed weekly. During the first three days expect a loss of weight—from 9 to 10 ozs.

The subsequent average weekly gain should be 4 ozs. for the first six months, and for the rest of the first year a little less.

DRUGS.

Avoid all unnecessary medication, and never prescribe a nauseous drug if a palatable one will do equally well.

In cases of **severe illness** do not order drugs likely to upset the digestion. Remember small doses frequently given are less likely to upset the stomach than larger ones administered less frequently.

Alcohol is borne well by infants. Half-an-ounce of brandy in the 24 hours freely diluted, and in oft-repeated doses, will probably be quite sufficient—do not exceed 2 ozs. In older children give double the

amount. It is to be administered when the pulse is weak and the child prostrate, and in the typhoid state.

Opium.—Remember infants are susceptible to opiates. Dover's powder can be given from $\frac{1}{20}$ to $\frac{1}{2}$ a grain during the first year, according to the age.

Cod-liver oil.—Do not give this when the tongue is furred and the digestion easily upset, and do not give it in the summer. Small doses for a long period are better than larger doses for a short one.

Chloral is best administered to infants by the rectum, as it is irritating to the stomach—1 to 5 grains during the 1st year. Bear in mind a possible scarlatiniform eruption.

Belladonna is usually well borne. The infantile pupil does not readily respond to atropine, and after instillation of eye drops flushing is frequently seen.

Strychnine.—Be careful of hypodermic injections to infants; physiological symptoms are readily produced.

Phenacetin and **antipyrine**, the former tasteless but insoluble, and the latter bitter, are useful antispasmodics (for the larynx,

bronchi, and convulsions) and anodynes. Remember the possibility of a measles rash.

Bromides, iodides, and mercury, are well tolerated by infants and children. Remember, however, fungating sores in infants from the use of bromides.

Beware of **cocaine**.

Salicylates, salol, astringent iron preparations, and **acids** are irritating to the infantile stomach.

When using **arsenic** for any prolonged period, remember **pigmentation, shingles**, and **neuritis**, as possible complications.

Antitoxin may produce erythematous eruptions, fluid in the joints, and albuminuria—remember this.

MASTITIS.

Enlargement of the breasts with secretion of milk in new-born infants of both sexes is physiological. Do not permit the nurse to tug at the nipples to "break the nipple strings," or on any other pretext; **an abscess may result**, with possible permanent injury to the organ.

Protect the glands from injury, and treat on general principles, should there be undue activity in the parts.

MALNUTRITION & MARASMUS.

In wasting of infants, after excluding serious organic diseases, such as empyema and morbus cordis, think of three possible causes: (1,) Dietetic; (2,) Syphilitic; (3,) Tuberculous. Exclude 2 and 3 by a careful physical examination. If the child be at the breast, see whether the milk is suitable both in quantity and quality. If artificially fed it will be dyspeptic, possibly with gastro-enteric catarrh. Correct the diet and gauge the progress made by the state of the stools and the evidence of the weekly weighings.

RICKETS.

Bear in mind rickets is a **preventible disease**; its causation is in the main dietetic, abetted by defective hygiene, and its treatment therefore should be prophylactic. Remember if nursing be unduly prolonged rickets will result. Other causes of ill-health — syphilis among them — tend to rickets, and require appropriate treatment.

The earliest indications are restlessness at night, sweating of the head, constipation, and beading of the ribs. It is uncommon under six months of age, and usually

develops between the sixth and fifteenth month.

Remember in rickets there are: (1,) Softening of the bones and ligaments and epiphysial enlargements. If the bones are tender suspect scurvy; (2,) Weakness and flabbiness of the muscles, which may suggest paralysis; (3,) A strong tendency to convulsions and allied neuroses; (4,) Persistence of the anterior fontanelle (this should close at twelve months), delayed and difficult dentition, and retarded walking; (5,) Liability to bronchitis, broncho-pneumonia, and collapse of lung; (6,) frequent gastro-intestinal disturbances and "pot belly"; (7,) Often secondary anaemia; (8,) A disposition to store up much cutaneous fat.

Do not mistake a rickety curvature of the spine for **Spinal Caries**. It can be separated from this condition by (1,) The roundness of the curve: (2,) The absence of rigidity; (3,) Its disappearance when the child is held up or placed on its face; (4,) The presence of Rickets; (5,) The absence of the signs of Spinal Caries.—*Vide "Paraplegia,"* page 132.

Fœtal Rickets is a condition of imperfect ossification induced by maternal

ill-health during the pregnancy. The bones bend and undergo green-stick fractures. The epiphyses may or may not be enlarged, and **craniotabes** be present or absent. **Achondroplasia** is distinct from Foetal Rickets. The trunk is long and narrow, the extremities about half the natural length, the chief diminution being in the femora and humeri, and the epiphyses being large from hyperplasia of the cartilaginous ends of the bones. It is a condition illustrated in animal life by the Dachshund.

The treatment is to remedy dietetic indiscretions ; to substitute a hygienic environment for that which is faulty ; to prevent deformities, and to administer cod-liver oil.

SPECIFIC INFECTIOUS DISEASES.

DIPHTHERIA.*

For the **early diagnosis** of diphtheria place most reliance on the local symptoms : Tough character of the membrane, bleeding

* Incubation : 2—5 days. Quarantine : Do not discharge as long as the throat gives bacteriological evidence of Diphtheria.

when removed, tendency to spread to contiguous parts, cervical adenitis, perhaps loss of patellar reflexes, and albuminuria. Catarrh of the naso-pharynx with ichorous nasal discharge, is probably diphtheria.

Membrane in the throat or nose in **measles** or **scarlatina** occurring early, is probably not diphtheria; but if arising after the primary fever is probably so.

If the local signs point strongly to diphtheria, bacteriological evidence to the contrary notwithstanding, treat it as diphtheria. The *D. bacillus* will probably be discovered on a subsequent examination.

Remember in **young children** when once the larynx is involved there is a strong predisposition to invasion of the lower air passages. Broncho-pneumonia is a common complication, whether the larynx be attacked or not (*vide* Laryngitis).

Remember toxic myocarditis. Keep careful watch over the heart of diphtheria convalescents. A slow pulse, becoming rapid on slight exertion, an inaudible or weakened first cardiac sound, slight dyspnoea, and vomiting, are grave signs.

Be on the watch for diphtheritic paralysis (*vide* Neuritis) from one to three weeks after the throat has cleared.

Remember every case that has been exposed should receive an immunizing dose of antitoxin. Do not delay the administration of antitoxin in a young child, or in a severe case. If no improvement takes place in twelve hours repeat the dose, and again in twenty-four hours if necessary. Feed nursing infants by breast milk withdrawn by the breast pump.

In laryngeal diphtheria be prepared for respiratory trouble in sequence to the separation of the membrane about twelve hours after the administration of antitoxin.

Topical applications are best left alone if the child struggles and greatly resists them; in such a case forcible administrations will reduce the child's strength. Keep the child in the recumbent position during the illness, by shoulder straps if necessary.

ENTERIC FEVER.*

Remember this disease is exceedingly rare under 2, but after the fifth year it is common.

In children it is *usually* a mild disease.

* Incubation: 14--21 days.

It may abort at the end of the second week, or last about three weeks.

The mental condition is one of apathy—frontal headache and slight nocturnal delirium are common.

The type of fever is **remittent**—during convalescence the temperature is sub-normal. Rose-coloured spots are present in three-fourths of the cases.

If the spleen remains large during convalescence expect a relapse. The abdomen is as a rule swollen.

Constipation is common. The motions may be loose and are then atypical—pea-soup dejecta are the exception. Small quantities of blood are often found in the stools during the second week, but **haemorrhage** in quantity is rare, so is **perforation**. If the latter occurs an immediate abdominal section may save the child.

Remember the possibility of **confusing with other diseases** in the absence of true rose spots. The most usual are tuberculosis of abdominal type, and tuberculous meningitis; sometimes bone pyæmia and malaria.

Examine the blood for Widal's reaction,

and inspect the fundus oculi for tubercles of the choroid.*

There are certain **points in the treatment** worth remembering. For nourishment order from 30 to 40 ozs. of milk in the twenty-four hours, according to age, in three-hourly portions. Have the child washed in bed night and morning with water at a temperature of 90°F.—see that the anus and buttocks are kept quite clean. Should the temperature rise above 105°F.. with restlessness and delirium, baths may be given every three hours at a temperature of 80°F.—children do not bear cold bathing well.

If diarrhœa is excessive give starch and opium enemata.—5 to 10 minims of tincture of opium and $\frac{1}{2}$ an ounce of starch—a larger enema will be returned.

For constipation during the attack use simple enemata every third day, unless peritonitis is threatened, but during convalescence give strychnine.

* For coloured plates of this condition see Reports of The Society for the Study of Disease in Children, Vol. I., pages 170 to 177. Article, Tuberculosis of the Choroid, by Dr. George Carpenter and Mr. Sydney Stephenson.

If the first sound of the heart weakens give alcohol: if that fails small doses of digitalis.

Light solid food may be commenced when the temperature has been down a week; if the digestive powers are over-taxed there will be a rise of temperature.

ERYSIPelas NEONATORUM.

There are two varieties in the new-born.

(1,) In sequence to puerperal fever, an acute and rapidly fatal general disease, attended by high fever, sickness, diarrhoea, and jaundice, perhaps complicated by inflammation of the serous membranes and arthritis.

(2,) A wandering erysipelas, which starts from some cutaneous lesion, usually under the napkin area, and which tends to spread over the whole cutaneous surface. **The advancing edge** is well defined, and upon it are, perhaps, small vesicles containing a clear or opaque fluid.

The complications are abscess and gangrene. The fever and symptoms vary in intensity, and the prognosis is usually bad. **Treat on general principles, and try anti-streptococcus serum.**

INFLUENZA.

Bear in mind influenza presents itself in **various forms**. Relapses and second attacks are common. Prostration is a prominent feature of the disease, and subsequent anæmia is usual.

It appears:—

- 1.—Most often as a moderate febrile attack ; or infrequently as a severe one with, sometimes, symptoms suggesting meningitis.
- 2.—As an inflammation of the naso-pharyngeal tract, with special tendency in infants to ear complications and cervical adenitis.
- 3.—As an inflammation of the respiratory apparatus with bronchitis, or broncho-pneumonia, or pleuro-pneumonia.
4. —As a gastro-enteritis, which in some children suggests typhoid fever.

In infants the tendency to pulmonary complications is much greater than in older children.

Bear in mind **sporadic cases** are difficult to diagnose. When well-known complaints are simulated (scarlet fever, meningitis, or typhoid fever), the subsequent

behaviour of the disease determines its real nature.

Remember to isolate the case and protect other children in the house from it, as far as possible.

When attacks constantly recur, change of air is necessary.

MALARIA.

Infants and young children are very liable to mosquito bites; the proportion of cases of malaria in infants is greater than at any other period. The presence of malaria in infants indicates the district is malarious.

The **tertian** parasite attacks the red blood discs; it is a hyaline amœba-like body, containing dark pigment granules, and when full-grown it nearly fills the corpuscle.

The **quartan** parasite is smaller, with coarser pigment granules.

At the time of the paroxysm the tertian plasmodium divides into 15 or 20 segments, and into 5 or 10 segments in the quartan; it takes 48 hours to mature in the tertian, and 72 hours in the quartan. Should there be more than one generation of tertian

plasmodium, the fever may be **quotidian** (2 parasites), the ripening happening on different days.

In **quartan**—very rare in children—with two parasites, the intervals of ripening would be 48 hours (**double quartan**), or with three parasites, 24 hours (**quotidian**).

Regular and irregular periodicity depend upon the times of ripening of the parasites.

Remember that while children over five years old are attacked in the same manner as adults, **in infants the chills are likely to be replaced by vomiting, delirium and convulsions.**

Do not be misled in children under five years old by a condition of apathy and drowsiness or by one of collapse, with cold and blue extremities, **in place of the chill.** The paroxysms occur more frequently than in adults; the **fever is usually remittent** or an irregular form of intermittent fever, the temperature is higher; the sweating stage is absent or ill-marked. The paroxysm is also likely to be attended by signs in the lungs suggesting **pneumonia** or **bronchitis.** The **spleen** is enlarged in nearly all cases.

In subacute and chronic forms of paludism there is marked anæmia; frontal

headache; splenic enlargement; *slight* fever and—this is important—the presence of malarial parasites in the blood.

Always bear in mind in malarious districts that paludism in young children is very protean in its behaviour, that it simulates closely many other diseases, and so much is this the case that in all diseases in which periodicity is noticed an examination of the blood should be made during a paroxysm, and that quinine should not have been previously administered. For the detection of the plasmodium examine under an oil immersion lens a fresh unstained specimen of the blood. Failing a blood examination give quinine.

Prophylaxis.—To prevent mosquito bites use a few drops of oil of rosemary or oil of pennyroyal, well rubbed into the hands and face, and sleep under mosquito curtains.

MEASLES.*

During the catarrhal stage the swollen congested face is suspicious. **Search for a rash** on the soft palate—it appears a day or two before the cutaneous eruption, which is

* Incubation : 10 to 12 days. Quarantine : 3 weeks.

due on the fourth day. Köplik's spots are present four or five days before the rash. Examine the mucous membrane of the cheeks in **bright daylight**. They are bluish-white slightly raised specks in the centre of a bright red patch the size of a lentil.

Remember **catarrhal and membranous laryngitis** are not uncommon in the early stages, or when the rash is receding.

Expect **bronchitis or broncho-pneumonia** if the temperature remains high after the sixth day.

The middle ear should be examined as a routine during the course of the illness.

During convalescence protect from chills, for fear of lung or gastro-intestinal troubles. **Otitis** is common. Acute tuberculosis is not unlikely to occur as a sequela.

Isolate and keep the room at a temperature of 66° F.

When the rash is scanty, the temperature high, and there is much congestion of internal organs, use mustard baths ($\frac{1}{2}$ oz. to 1 gallon of water, T. 100° F.), quickly dry, and place between the blankets.

Remember it is not wise to check diarrhoea, unless it prove excessive.

PAROTITIS.*

The parotid swelling is situated above the level of the angle of the jaw, invades the cheek, and the lobe of the ear, which is pushed upwards and forwards, is about the centre of the tumour. The throat is healthy. In cervical adenitis, with which it is sometimes confused, the swelling is below the level of the lobe of the ear, and the throat will probably be found involved.

When the **submaxillary glands** are primarily involved it is, in the absence of other evidence, difficult to separate the condition from adenitis.

Remember the liability to **orchitis** in boys at puberty and of **mammitis** in female adolescents.

RHEUMATISM.

Rheumatism is rare under four; its subjects are often nervous, excitable, and emotional, and heredity is a powerful factor.

* Incubation : 14 to 25 days. Quarantine : 3 weeks, dating from the first appearance of the swelling.

Hot puffy joints, a little pain and a moist skin, insufficient perhaps to confine the child to bed, are common indications. Mere stiffening and hyperæsthesia of a joint *without* swelling and moderate fever; or pains on moving certain muscles, tendons, and ligaments may be the only indication—such are frequently thought to be “growing pains.” Multiple arthritis is more common than single.

Bear in mind the danger of confusing acute infectious **osteomyelitis** (acute arthritis of infants, acute epiphysitis, acute necrosis) with rheumatism. Be watchful for redness of the skin and fluctuation over the shaft of a long bone or in the neighbourhood of the epiphysis, with possibly secondary joint implication. **Severe constitutional disturbance and intermittent fever** are its associates. **Immediate surgical treatment is necessary.** It is usually due to staphylococcus infection, and may be complicated by peri- and endocarditis.

Remember **purulent ophthalmia** of new-born infants may be associated with attacks of **sub-acute arthritis** without surface redness, or with an acute form of joint inflammation. Note the tendency to an extension of the swelling beyond the limits

of the joint. **Treat the ophthalmia, and keep the joint quiet.**

Also bear in mind the possibility of joint implication from organisms other than the gonococcus, *e.g.*, the pneumococcus.

Do not mistake **gummatous synovitis**—with or without associated osteo-chondritis (see page 46)—in infants, and gummatous synovitis in children, here usually a painless symmetrical effusion into the knee joints, for rheumatism.

Do not forget that pain referred to the knee, and limping, may indicate **tuberculous disease of the hip joint.**

Do not confuse **scurvy** in infants (see page 100) with rheumatism—the immobility of the extremities, usually the lower, and the intense pain experienced might mislead.

Remember **hæmophilia** is sometimes attended by effusion of blood into the joints, which might suggest rheumatism.

Separate cases of **osteo-arthritis** from rheumatism. Here the swelling of the joints is **pericapsular**, and not intra-articular. The affection is **chronic**; the muscles round the affected joints waste, there is fever, sweating, and secondary anæmia. The salicylates are useless, and topical applications and tonics must be relied upon.

A condition which cannot be distinguished from osteo-arthritis of the fingers and hands is seen as a rarity in **syphilis tarda**.

Scarlatinal synovitis is indistinguishable from rheumatism—the history alone decides its nature.

Bear in mind the danger of rheumatism arises from the heart. A little over half the cases may be expected to be attacked. **Pericarditis** is not uncommon, but uncomplicated **myocarditis*** is exceedingly rare. Remember the value of **opium** in small repeated doses in heart complications. Always examine the heart carefully and repeatedly, and do not be deceived by the apparent triviality of the attack.

Remember the **rheumatic associates** are erythema multiforme, erythema nodosum, purpura (see “**Purpura**,” page 98), tonsillitis, pleurisy, pleuro-pneumonia, and chorea. **Subcutaneous fibrous nodules** are often found associated with chronic progressive heart disease. Give salicylates for these.

Hyperpyrexia is an exceedingly rare complication. I have seen one fatal case in a child of 3½ years.

* On cases of uncomplicated myocarditis in children, by the author. *Lancet*, May, 1903, pages 1508-11.

Anæmia becomes pronounced, and leucocytosis is often marked. Persistent anæmia associated with rheumatic carditis is a bad sign.

Give **salicylate of sodium**. When the pain and swelling have been relieved reduce the dose by one-half. If results are barren in three or four days, give alkalies. Give alkalies when heart complications are present.

When the temperature has been down for a week farinaceous food may be allowed, and remember meat preparations given too early will cause a relapse.

Torticollis occurring acutely and disappearing spontaneously is frequently rheumatic. It is often associated with rheumatic tonsilitis, occasionally with erythema scarlatiniforme. Do not fail to examine the heart, and note its condition from time to time, as endo- and pericarditis may arise.

RUBELLA.*

Remember there are **two varieties** of rash, which commonly appear on the day of

* Incubation : 5 days to 3 weeks. Quarantine: 3 weeks.

invasion, the measly and the scarlatinal. The eruption in the former is of a rosy red colour, and in that respect differs from measles. The scarlatinal eruption, which is less common, is for all practical purposes like that of scarlatina. The eruption is usually out of all proportion to the other signs of the disease, and this is its chief characteristic. Rubella is usually devoid of complications and sequelæ.

SCARLET FEVER.*

Remember the onset is very sudden. Sickness, fever, a burning skin, sore throat, and the rash out within 24 hours. The onset of pneumonia simulates it, but the two last symptoms are wanting.

The rash is often patchy, and perhaps limited to a small area of the body. Remember scarlatiniform eruptions are produced by other agents: (1,) Gastro-intestinal disturbances; (2), The specific fevers; (3,) Septic conditions; (4,) Various drugs; (5,) Rheumatism; (6,) Simple enemata. In the absence of the above, if the rash lasts longer than 24 to 48 hours it is scarlatinal, even

* Incubation: 1—3 days, rarely a week. Quarantine: 7 clear days, dating from last exposure.

though the temperature be raised but a trifle and the sore throat not very obvious.

Do not mistake the case for measles, because the onset occurs with some nasal catarrh and suffusion of the conjunctivæ. Scarlatina is attended by leucocytosis, measles not so ; an examination of the blood may therefore assist you.

Remember some cases of **diphtheria** are associated with septic rashes, scarlatiniform or measles, or a combination of the two.

If the temperature persists beyond a week, search for complications. Do not overlook the middle ear and the joints when examining the organs. **The middle ear** should be examined as a routine during the course of the illness.

In severe **throat complication**, mop or spray it with a suitable antiseptic.

Do not overfeed during convalescence, if you wish to avoid scarlatinal nephritis. Keep the child warm and the bowels open. Examine the urine every day.

Do not release the child if there be desquamation, discharges from the throat or nose, glandular abscesses, pustular dermatitis, or otorrhœa.

Remember the skin may recommence desquamating after the process has apparently finished. Do not use strong antiseptics to the skin.

SYPHILIS.

Remember syphilis rarely appears at birth or at a later age than three months.

If a breast-fed infant free from dyspeptic troubles waste, strongly suspect syphilis.

Nocturnal insomnia in a judiciously fed wasted infant suggests syphilis in the absence of uric acid (*vide "Lithuria,"* page 102).

Chronic nasal catarrh ("snuffles") is the earliest indication of syphilis, not infrequently the only one. Eliminate congenital adenoids and ordinary coryza.

Remember the favourite situations for syphilitic rashes (*vide "Syphilodermia,"* page 156), which are polymorphous, are the napkin area and the face. If the rash extends beyond the napkin area to the calves and the abdomen, it is syphilitic.*

* For pictures of these conditions see *Syphilis in Children*, by the Author, pp. 15-31.

The usual eruption is maculo-papular, with a tendency to scale and a disposition to fusion of the lesions, with attachment of large areas of the cuticle. Fissures and mucous patches about the lips and anus often accompany this condition.

Cutaneous gummata about the size of peas, with vesicular or purulent tops, occurring either alone or associated with the above lesions, are not at all uncommon. Mothers call them "blind boils."**

Eruptions after the first year, syphilitic lupus excepted, are very unusual.

If there be **craniotabes**, suspect syphilis.

Enlargement of the spleen, in the absence of malaria, within the first six months of life, probably denotes syphilis; so does hydrocele.

Cranial osteophytes are usually found in rickety children, often with splenic enlargements; 57 per cent. of my cases were found to be syphilitic. **Syphilitic epiphysitis** is distinguished from rickety by the fact that enlargement extends up to the shaft of the bone. The limb hangs helpless (pseudo-paralysis). Separate this from **peripheral birth palsy**, and try electrical muscle reactions, if necessary.

Infantile syphilis is sometimes very difficult to detect, and the evidence obtained from a physical examination may only amount to a suspicion, even with a strong hereditary taint. When in doubt examine other children of the family; valuable information may be obtained in this way. If there is still a doubt, do not hesitate to give a mercurial course; it will do no harm and may do much good.

Syphilis tarda is a recrudescence of the old malady, and occurs in older children. The onset of the second dentition and puberty are critical periods.

Nerve deafness, interstitial keratitis and notched peg-shaped upper central incisor teeth, are frequent associates. Gummatous ulceration of the nose, the throat, and the larynx are not infrequent manifestations, as also osteo-periostitis and gummatous effusion into the knee joints. Cutaneous gummatous ulcers are not uncommon.

Mercurial treatment (hyd. c. cretâ gr. j thrice daily) should be continued for at least a year. In tertiary manifestations give iodides with or without mercury. Children will bear large doses well—5j to 5ij daily.

Remember discharges and secretions

from syphilitic infants can cause syphilis. A healthy woman should not suckle a syphilitic infant, but its mother may nurse it, or a woman who has contracted syphilis, or borne a syphilitic child.

TETANUS NEONATORUM.

Expect symptoms from a week to ten days after birth. The first thing to attract the attention is a difficulty of suckling.

Search for spasm of the masseters and the orbicularis oris muscles—they feel hard. Gradually the rest of the facial muscles and other muscles are attacked by spasms, viz., those of the neck, the trunk (retraction of the head and opisthotonus), and the extremities. In the intervals relaxation is incomplete, and exacerbations are induced by trifling stimuli, during which the child cries with pain and becomes cyanosed. Fever may be trifling or absent.

Prevention.—Suitable treatment of the cord at birth, and the exclusion thereby of the tetanus bacillus.

Treatment.—Cleanse the umbilicus with boric acid fomentations. Inject 5 c.c. of

tetanus antitoxin, and repeat the dose if necessary. Feed through the nose by a glass syringe, or by the nasal tube.

TUBERCULOSIS.

Miliary tuberculosis is a general disease affecting the lymphatic glands, the viscera, and serous membranes, and is rare during the first two years.

Remember the disease may imitate typhoid fever — try Widal's reaction — or capillary bronchitis, or patchy bronchopneumonia. In any case examine the fundus oculi for tubercle of the choroid,* or optic papillitis.

Examine the whole body carefully for tuberculous mischief, not forgetting meningitis.

VACCINIA.

Remember there are certain **unavoidable complications** and sequelæ of vaccination, such as erythema scarlatiniforme,

* For coloured plates of this condition see Reports of The Society for the Study of Disease in Children, Vol. I., pages 170 to 177. Article, Tuberculosis of the Choroid, by Dr. George Carpenter and Mr. Sydney Stephenson.

erythema morbilliforme, erythema multiforme, urticaria papulosa, impetigo contagiosa, acute glandular abscesses, and chronic adenitis, simple and tuberculous.

General vaccinia (cow-pox), a **very** rare affection, may arise on or before the 5th day after vaccination. The prodromal symptoms are insignificant, quite unlike those of variola, and the eruption consists of papules, vesicles, and pustules irregularly distributed on the face, body, and extremities.

VARICELLA.*

Remember the eruption appears on the day of invasion, and, though sometimes preceded by a scarlatiniform rash, is usually the first thing noticed.

Bear in mind the eruption occurs in successive crops for four or five days. A polymorphous eruption of rose-coloured papules, vesicles (not uncommonly umbilicated), sometimes pustules, and scabs, associated with intermittent fever, mark the disease.

Remember some of the lesions may, as a

* Incubation: 13 to 16 days. Quarantine: Discharge when the skin is quite healthy.

rarity, develop a black slough—**varicella gangrenosa**—and this condition frequently betokens general tuberculosis (*vide* “Gangrenous Dermatitis,” page 152). Next remember **impetigo bullosa contagiosa** may arise from scratching the lesions, and retard convalescence.

Remember it is to be distinguished from modified small-pox by the absence of premonitory symptoms, and by the fact that different stages of the rash are present at the same time.

VARIOLA.*

Variola is **very fatal to unvaccinated infants and children**—the younger the child the greater the danger. It is **very rare** in those who have been vaccinated.

Remember if an infant be born of a mother suffering from variola, vaccination will protect it.

In the prodromal stage, which lasts three or four days, the fever is high and the constitutional disturbance great. **It is nervous**

* Incubation: 12 days. Quarantine: Discharge when the skin is *quite* clear.

in type and likely to simulate other diseases.

There may be a **scarlatiniform** eruption—it attacks the lower part of the abdomen and inner surfaces of the thighs. Scarlet fever **first invades** the chest and neck—note this.

On the 3rd or 4th days the symptoms and fever abate, **the rash appears**, on the forehead and face first, red shot-like papules. On the 3rd day the papules vesiculate; on the 5th day the vesicles are distinctly umbilicated, and on the 8th day there is suppuration and the temperature rises—**the fever of suppuration**. The temperature remains up for a day or two and gradually subsides. **Compare this with the symptoms of varicella** (see page 49, and “**Varioloid**,” see page 52).

Confluent Form.—The initial temperature does not fall so much as in the **Discrete** variety, and diarrhoea is likely to occur.

Hæmorrhagic Form,—Expect purpura, hæmaturia, and hæmatemesis during the prodromal stage. Constitutional symptoms are **very** severe, and a fatal termination may be expected early, often before the rash

appears. Hæmorrhage, occurring later and taking place in the vesicles and pustules, is not of such grave import.

Common complications are œdema of the glottis and broncho-pneumonia, and do not forget to frequently examine the middle ear.

VARIOLOID.*

Remember there is **constitutional disturbance** for three or four days, then the rash appears, red shot-like papules, the temperature falls rapidly when the rash is fully out, and the attack aborts ; or vesicles form and dry up, perhaps a pustule or two appear, fever being trifling or absent.

WHOOPING COUGH.†

A tickling, uncontrollable dry cough, troublesome at night, with a feverish cold, is suggestive of whooping cough. If in doubt **isolate**—this stage is very infectious.

* Incubation : 12 days. Quarantine : Discharge when the skin is *quite* clear.

† Incubation : 7 to 14 days. Quarantine: Probably infectious as long as the cough lasts.

Remember the characteristic stridulous inspiration is **not essential for diagnosis** — the peculiar paroxysmal convulsive cough denotes the complaint. Frequent sickness with a cough suggests its nature, especially if the face is puffy-looking. Bear in mind **nurslings do not whoop**, as a rule.

Broncho-pneumonia, patchy or lobar, is common, and the whoop then sometimes disappears. Hæmoptysis and wasting may follow, but do not necessarily indicate tubercle.

Do not forget a paroxysmal cough may be succeeded by **convulsions**. Subsequent drowsiness and coma are suspicious of meningeal, or cerebral, haemorrhage, which will be followed by death or hemi-paresis.

Convulsions arising apart from a paroxysm, unconnected with otitis media, or other obvious cause, suggest meningeal tubercle—watch for corroborative signs.

Isolate in a large airy room, efficiently ventilated, at a temperature of 65° F. In bad cases feed in small amounts and frequently, after a paroxysm. Bear in mind the rock ahead is **lung complication**, with tubercle in the horizon.

Treat the catarrhal stage by expectorants, the paroxysmal by sedatives and opiates,

the convalescent by resolvents and tonics. Pay particular attention to the toilette of the naso-pharynx—this is very important.

A digital examination of the naso-pharynx in some children produces a paroxysmal cough like whooping cough, with subsequent puffiness of the face.

Do not discharge the child until the chest is free and all cough has ceased. Bear in mind **a chill** contracted during convalescence will probably be followed by pleuro-pneumonia.

DISEASES OF THE CIRCULATORY SYSTEM.

THE HEART.

Look for the impulse one-third of an inch outside the nipple line until the fourth year, and in the mammary line from the fourth to the ninth year. It is either in the fourth or fifth interspace, and the upper limit of the area of absolute dulness commences at the third or fourth left costal cartilage. Bulging of the præcordia is a not infrequent sign of heart disease. **The tendency to dilatation** is one of the prominent features of heart disease in childhood.

HEART DISEASE.

CONGENITAL.

Congenital heart abnormalities originate in : (1,) Developmental irregularities ; (2,) Fœtal endocarditis, mostly occurring on the right side ; (3,) A combination of these conditions ; (4,) syphilis.

If heart disease be detected in a child under 3 years of age, the probabilities are strongly in favour of its being congenital.

Bear in mind **cyanosis** may not develop for months or years until precipitated perhaps by an attack of bronchitis or bronchopneumonia, or other illness. In confirmed cases there are blueness, often clubbing of the fingers and toes, dyspnœa, bulging of the praecordia, and cardiac hypertrophy. A loud and rough systolic bruit is often but not always heard. The most common is one whose greatest intensity is over the second left interspace or third costal cartilage.

The most common forms in those surviving infancy are stenosis of the pulmonary artery, or its conus arteriosus, with or without perforate ventricular septum, patent foramen-ovale and patent ductus arteriosus.

Remember such children are **prone to** tubercle.

Digitalis is useful if there are signs of heart failure. Beware of lung troubles and over-exertion, in fact, anything calculated to disturb the compensation.

ENDOCARDITIS (ACUTE).

Acute endocarditis is exceedingly rare under 3 years of age. In about 90 percent. of the cases it is due to the rheumatic state. Other conditions likely to produce it are the specific fevers, septicæmia, pleurisy, and pneumonia.

Never omit to examine the heart frequently in all febrile complaints, for endocarditis may be the cause of the febrile attack.

Remember endocarditis and myocarditis are frequent associates.

If the disease is rheumatic give salicylates and alkalies, and remember the value of opium for steadyng the circulation.

ENDOCARDITIS (CHRONIC).

Remember the mitral valve is the one nearly always affected — the aortic rarely suffers.

Clinically a **systolic murmur** of greatest intensity at the apex accompanying or replacing the first sound, is by far the most

common bruit. The murmur is characterised by its great diffusibility, and it is often to be heard all over the chest and in the back.

Diastolic and presystolic murmurs at the apex in association with chronic dilatation are not uncommon, and while under observation the diastolic bruit may give place to a presystolic. These murmurs are **not to be considered diagnostic** of stenosis of the mitral valve.

The **mitral obstructive murmur** is very rare apart from the regurgitant. A constricted mitral valve is rarely found in children.

Systolic bruits at the aortic orifice are not very uncommon, mostly associated with mitral disease, but a regurgitant bruit is exceedingly rare. Remember both single and double bruits are sometimes heard loudest over the pulmonary area, and not over the aortic.

If in a case of chronic valvular disease there is intermittent fever, enlargement of the spleen, and albuminuria, **remember ulcerative endocarditis** and the possibility of embolism of cerebral arteries.

If compensation be good do not treat the murmur—the heart should be left alone.

Dyspnœa, palpitation, and bronchitis indicate failing compensation.

Remember in children the prominent feature of even extreme cases, in the absence of fresh heart mischief, is that with rest in bed the stasis of blood in the venous system disappears.

The treatment of chronic heart disease is in the main preventive. Provide a suitable hygiene, beware of anaemia, prevent catching cold, shield from the specific fevers, beware of physical fatigue—no rough games, discourage overwork and mental worry, and pay special attention to the case at the advent of puberty.

Give **digitalis** when there is occasion for it. If the tincture cause vomiting prescribe the powdered leaves or the extract. When there is dropsy, potassium acetate and squills should be added to the digitalis.

ENDOCARDITIS (MALIGNANT),
(STAPHYLOCOCCAL, STREPTOCOCCAL, AND
PNEUMOCOCCAL).

Malignant endocarditis occasionally occurs in children in **congenital** or **acquired** heart disease, and as sequence to any infectious disease or septic process.

It is characterised by great constitutional disturbance, and intermittent and remittent fever. Expect during its progress an enlarged and painful spleen, albuminuria and haematuria; hemiplegia, cough and symptoms of pneumonia, and petechial haemorrhages in the skin. The heart symptoms are obscure as a rule, but not always.

Separate from typhoid fever by Widal's reaction and by leucocytosis, which is here present. Distinguish it from **general tuberculosis** and **tuberculous meningitis**—it may mimic the latter to the extent of optic papillitis and simulated choroidal tubercle.*

Treat by injections of antistreptococcus and antistaphylococcus serums, and if the serums of one manufacturer do not benefit try those of another.

PERICARDITIS.

The chief cause of pericarditis is the rheumatic state, except in children under 3, when it is mostly secondary to lung mischief. As occasional causes bear in mind scarlet fever, acute nephritis, broncho- and

* For a coloured plate *vide* Vol. II., Reports of The Society for the Study of Disease in Children, page 206, *Malignant Endocarditis*, by the Author.

pleuro-pneumonia, empyema, pyæmia, and tubercle.

Remember the frequent association of endocarditis with rheumatic pericarditis, and the liability of cases of chronic heart disease to develop pericarditis. One attack of pericarditis predisposes to others.

Absolute dullness in the fifth right interspace denotes the presence of fluid. Detection of friction is not incompatible with a large effusion.

Before deciding on paracentesis pericardiit to relieve dyspnoea and cyanosis, be careful to see that the urgent symptoms are really due to excess of fluid and not to a dilated heart.

In infants and young children **suspect pus**, unless starting in rheumatism. In the absence of pointing or pyæmia exploration can alone decide.

If pus be suspected, explore in the fifth left interspace, midway between the nipple and sternum, directing the needle upwards and outwards. If pus be found treat and drain as an empyema.

Remember fluid in the pericardium may simulate a left-sided effusion into the pleura.

If the disease is rheumatic it should be treated as a case of rheumatism. Rest in bed is most important, and should be continued for a prolonged period, long after the acute symptoms have passed away. **Opium** is invaluable to relieve pain and quiet the circulation.

ADHERENT PERICARDIUM.

Adherent pericardium is not uncommon. Owing to the large size of the heart and the frequency of murmurs, which are not always due to endocarditis, the condition is likely to be diagnosed as a dilated heart secondary to endocarditis. There are no trustworthy diagnostic signs of adherent pericardium.

DISEASES OF THE RESPIRATORY SYSTEM.

RHINITIS.

Infants are very prone to coryza—a thin discharge from the nostrils, fever, difficulty in suckling, a snuffling noise, and restlessness betoken the condition. **Chronic snuffles** suggests syphilis (*vide* page 44) or **congenital adenoids**. Look for corroborative signs of the former, and make a digital

examination of the posterior nares to exclude the latter. There may be much muco-purulent catarrh and yet no discharge of muco-pus by the nostrils, the secretion being discharged into the naso-pharynx and then swallowed.

Depression, sleepiness, and an ichorous offensive nasal discharge suggests diphtheria; examine the fauces, the urine, and the patellar reflex for corroborative signs.

Remember acute coryza may herald the approach of measles, whooping cough, or scarlet fever. Chronic coryza in older children suggests adenoids and hypertrophic rhinitis (see below), rarely syphilitic ulceration of the nose—syphilis tarda. Examine the anterior nares as well as the posterior.

ADENOID VEGETATIONS.

Remember in infants and very young children the symptoms are mainly those of a chronic cold in the head, and in older children mostly obstructive.

Frequent colds in the head with inability to blow the nose are very suggestive, so is night cough.

If a young child has attacks of **ear-ache**, **hoarseness**, or **dyspnœa** at night, think of adenoids:

Remember false croup and laryngismus stridulus suggest the propriety of an examination for adenoids.

Adenoids may be a reflex cause of various neuroses in older children—**asthma** and **enuresis** for instance.

Do not forget that the naso-pharynx when filled with adenoids is an excellent incubator for tubercle bacilli, and other germs.

When adenoids are discovered they should be removed at once.

CATARRHAL LARYNGITIS.

Remember this differs from catarrhal spasm by the fact that laryngitis **is a pronounced feature**, as evidenced by a rauous voice, brassy cough, and stridulous inspiration.

Bear in mind the clinical difficulty, in the absence of membrane in the throat, of separating this disease from membranous laryngitis. The child should therefore be

isolated as a precautionary measure. Take a swab from the throat and glottis, and search for the D. bacillus. Examine the urine for albumin and test the patellar reflexes. If in spite of steam inhalations the condition of the larynx becomes steadily worse, **do not wait for bacteriological confirmation**, but at once give antitoxin.

Primary membranous laryngitis is almost certainly diphtheritic; it is only in early association with measles and scarlet fever that the membrane is probably of coccal origin.

Remember the indications for **intubation** are pallor, prostration, a rising temperature, and increasing dyspnoea as evidenced by falling-in of the episternal and epigastric fossæ, and recession of the interspaces. Do not wait until the child becomes cyanosed. If intubation fails **tracheotomy** can be performed.

Never proceed to perform intubation without having everything ready at hand for tracheotomy; the glottis during the necessary manipulations of the intubation tube may become blocked by displaced membrane.

In a case of urgent dyspnoea necessitating an operation, never omit to inspect and, if

necessary, digitally examine the throat before doing tracheotomy; the dyspnoea might be due to a **retro-pharyngeal abscess** (see page 76).

CATARRHAL SPASM OF THE LARYNX (False Croup).

Remember in this complaint there is mild laryngeal catarrh, but **spasm** is a marked feature.

The child is apparently well, or fairly comfortable during the day, but has nocturnal attacks for two or three days of stridulous breathing and dyspnoea.

Bear in mind **enlarged tonsils** and **adenoids** as predisposing causes.

CHRONIC LARYNGITIS.

Remember in infants this is probably **syphilitic**. In older children it is usually **catarrhal**, and mostly associated with **adenoids** and **hypertrophic rhinitis**.

Use the laryngoscope wherever possible, as it is only by this means a certain

diagnosis can be made, and bear in mind the possibility of syphilitic and tuberculous laryngitis and papillomata.

LARYNGISMUS STRIDULUS.

This is a neurosis characterized by a sudden catch in the breathing, followed by stridulous inspiration or crowing. In many the catch in the breath is not followed by stridor. If the spasm of the glottis is not relieved, convulsions will follow. Do not forget traction of the tongue is of value, and if this fails artificial respiration and even intubation or tracheotomy may be necessary.

Bear in mind **rickets** and **gastro-intestinal disturbances** are common associates, and require treatment.

Plenty of **fresh air** is essential, and **bromides**, **chloral** and **antipyrine** are useful. Search for any reflex exciting causes, and do not overlook **adenoids**.

Remember a digital examination of the **naso-pharynx** may produce a spasm—be prepared for this.

Do not use gas as an anæsthetic for the removal of the adenoids, which should be

done if they be present, and in any event be prepared to perform tracheotomy at a moment's notice, if necessary.

ASTHMA.

The infant cutting a tooth with bronchial spasm, the child catching a cold and developing dyspncea from spasm of the tubes, or suffering in like manner in sequence to dyspepsia, are examples of asthma, usually a hereditary neurosis.

Do not mistake the urgent dyspnœa sometimes seen in acute nephritis and contracted granular kidney, for asthma. Bear in mind hysteria.

BRONCHITIS.

Remember bronchitis may be primary, or secondary to some other trouble, such as whooping cough, measles, influenza, and typhoid fever.

Rickety infants and **young children** are specially liable to bronchitis, and it is very dangerous to them owing to weakened muscles and softened ribs. Children under 5 do not expectorate, they swallow the sputum.

BRONCHO-PNEUMONIA.

Remember broncho-pneumonia is an affection particularly of **infants and young children**, and that it is often **lobar** in its distribution, the apex, the bases, and so on. In other cases it is **patchy**. In the first there will be the usual signs of consolidation, together with those of bronchitis in varying amount. As in pneumonia, the child can lie down in the cot, if the bronchitis is not marked. Râles manufactured in the solid lung are heard as if close to the ear, and are diagnostic of consolidation. In the other variety the usual toneless bronchitic râles are associated with râles of consonating quality. The attack commences as bronchitis and passes on to broncho-pneumonia, or there is consolidation with trifling bronchitis, and the condition is like that of croupous pneumonia, but recovery is by lysis, not crisis.

It is easy to overlook **whooping cough** in the presence of broncho-pneumonia. The whoop frequently ceases when this arises, to return on its clearance.

Remember the usual duration is about a **fortnight**, but the most chronic cases, lasting many weeks, are seen in whooping cough, and here extreme wasting may lead

to a suspicion of tuberculosis, so be cautious about pronouncing a fatal verdict.

Broncho-pneumonia and bronchitis may be **tuberculous**. How to distinguish them? There are no certain means in the absence of tubercles in the choroid, and even when these are present the lung mischief is not **necessarily** tuberculous, though probably so. The following are suspicious, but not infallible: An ashen grey face; paroxysmal attacks of cyanosis; frequency of respirations in excess of the lung mischief; convulsions in the absence of cyanosis; œdema of the hands and feet; tuberculous mischief elsewhere.

When there is a patch of dulness which does not clear, and when there is associated fever, you must explore.

Remember as long as the mucus is scanty and tenacious, use **depressing expectorants**, ipecacuanha, antimony, and steam inhalations. When the cough is loose give **carbonate of ammonium** and **squills** and a stimulating liniment. Do not use poultices, a cotton wool jacket is the best.

Do not give alcohol if there is any suspicion of cyanosis. Do not overload the stomach. If there are signs of heart failure give digitalis, ether, strychnine, and

ammonia, or if the right heart is becoming hampered, place 3 or 4 icebags over the sternum.

CROUPOUS PNEUMONIA.

In all cases with high fever and convulsions think of pneumonia, examine the chest carefully, and remember the signs may be delayed for a day or two, or more. **Apex pneumonia is common.** Do not forget this.

Remember the rapid fall of temperature at the crisis may be attended by **sudden collapse** and danger to life. Be prepared for this with stimulants. A large increase of the white blood corpuscles, a **blood crisis**, anticipates the temperature crisis by some hours.

If after the crisis the **temperature remains up**, in the absence of further signs of an extension of pneumonia, think of **empyema**. Carefully examine the chest and explore if there is any doubt.

For sleeplessness, delirium, pain and cough, opium is the best remedy. For a failing heart give alcohol, ether, digitalis, and hypodermic injections of strychnine. If the temperature rises over 104° F., use an ice bag to the chest.

PHTHISIS.

In children under five the indications are very indefinite. Exclude the dyspeptic wasting of infancy and hereditary syphilis, and that connected with empyema and broncho-pneumonia in whooping cough. Exploratory puncture in empyema, and lapse of time in broncho-pneumonia, hectic and wasting notwithstanding, will decide, and probably favourably.

The family history and indications of tuberculous mischief elsewhere have to be taken into account. Always examine the fundus oculi for choroidal tubercle, which is not so rare as often supposed.*

Any part of the lung may be attacked, the base, the root, or the apex. Merely deficient resonance, a few consonating râles to begin with, but later on more marked signs of consolidation perhaps. Often in the most advanced cases the physical signs are very indefinite.

In children over 6 the apex is often singled out. In the early stages a few

For coloured plates of this condition see Reports of The Society for the Study of Disease in Children, Vol. I., pages 170 to 177. Article, Tuberculosis of the Choroid, by Dr. George Carpenter and Mr. Sydney Stephenson.

bronchitic râles, or rhonchus limited to the apex, and impaired resonance, with subsequent downward extension. **Hæmoptysis** is absent as an early sign.

Remember **apical pneumonia** is common in infants and children. It usually quickly resolves, but may be very dilatory in this respect and persist for months.

PLEURISY.

Be prepared to find fluid effusion under several clinical types, the breath sounds in all cases being loud (extra-puerile) on the unaffected side.

- 1.—Signs of consolidation of the upper, or upper and middle lobes, with deficient vesicular murmur over the lower.
- 2.—The chest is dull all over (the apex excepted, which is skodaic), with weak vesicular breath sounds or distant tubular breathing.
- 3.—Dulness over the lower lobe and deficient entry of air.

Do not forget the possibility of a **localised empyema**, and remember to localise

the position of the cardiac impulse, for it is a most important sign in forming a diagnosis.

There are no reliable signs to distinguish between serum and pus, except the exploring needle.

When there is much fluid in the chest, the heart displaced, and dyspnoea a feature, aspirate at once.

Do not leave simple fluid in the chest longer than three weeks, but do not aspirate if the temperature is raised, as there will be a re-accumulation. Cease aspiration as soon as coughing commences.

When absorption of fluid has occurred, impaired resonance and deficient vesicular breath sounds may persist for a long time.

There is **only one method** of dealing with an **empyema**, viz., immediate evacuation and free drainage.

DISEASES OF THE DIGESTIVE SYSTEM.

DENTITION.

If an infant is feverish and sleepless, do not offhand attribute this condition to

teething. All such patients should be carefully examined for other possible ailments.

Do not neglect bronchitis and attacks of dyspepsia, because the child happens to be teething. Whether reflex or not, their appropriate treatment is **very important**.

Do not lance the gums indiscriminately. If the gum is red, hot and swollen, over an oncoming tooth, and there is constitutional disturbance, it may be done with propriety, not otherwise.

Do not overlook the importance of paying proper attention, hygienic and dental, to the **temporary teeth**. Decayed teeth are a fruitful source of ill-health, of injury to the permanent set, and of tuberculous adenitis.

STOMATITIS.

For **aphthous stomatitis** give a mouth wash of boric acid (gr. x ad 5j) and apply lapis divinus to the ulcers. If this fails touch the lesions with mitigated nitrate of silver. Do not give chlorate of potassium; it is of no value in this affection.

Ulcerative stomatitis.—Bear in mind carious teeth as a probable cause, and do not forget the possibility of scurvy.

Chlorate of potash internally and locally is of value, but if unduly pushed it sometimes causes purpura, haematuria, and great enlargement of the liver with a fatal termination. Bednar's aphthæ in nursing infants consist of one or two symmetrical ulcers on the hard palate at its junction with the soft.

Gangrenous stomatitis.—Do not confound this with ulcerative stomatitis. In both the cheeks are swollen and the breath foul, but in the former the cheek is brawny, and a central black slough will be found, which rapidly invades and excavates the brawny tissue. Treatment to be of any use must be prompt and surgical.

Thrush.—The treatment in nurslings is prophylactic. Purity and suitable storage of milk, chemical cleanliness of utensils, and in delicate infants the toilette of the mouth after feeding (borax gr. x. ad $\frac{5}{3}$ j). When thrush has developed, touch the patches with a saturated solution of boric acid several times a day, and observe the above recommendations.

TONSILLITIS & PHARYNGITIS.

View all cases of sore throat with suspicion, and temporarily isolate. Inspect

the throat whenever a child is ill and feverish.

Remember rheumatic sore throat; the heart should be systematically and frequently examined.

HYPERTROPHY OF TONSILS.

Hypertrophied tonsils are rarely large enough to cause symptoms before the end of the second year.

The tonsils **should be excised** if very large, or if of medium size and frequently inflamed and leading to deafness.

Do not forget the part enlarged tonsils play as the "open door" for tubercle bacilli, and their vulnerability to diphtheria.

RETRO-PHARYNGEAL ABSCESS.

If in an infant or young child there are dysphagia, stertorous breathing, and dyspnoea, the laryngeal cry perhaps being natural, suspect post-pharyngeal abscess.

There are two varieties, the acute in infants and young children, secondary to

some infection from the upper air passages. This variety should be opened *via* the mouth with the head dependent, so that the pus may not be inhaled or swallowed. The **chronic** is due to tuberculous disease of the spine. It is found in children over 3 years of age, and is rarely seen in infants. This should be opened by an incision in the neck.

DYSPEPSIA.

Always make it your practice to **examine the stools**; much important information can be acquired thereby.

The dyspeptic infant is sick, or develops diarrhoea and flatulency, or suffers from colic and tenesmus, or is constipated. Vomiting, if chronic, consists of stale curds and mucus. The motions contain curds, and are green and slimy or are grey coloured and smeared with mucus. Remember dyspepsia if prolonged will lead to gastro-intestinal catarrh, with subsequent **atrophy of the digestive glands**. If breast-fed, search for a maternal cause; if artificially reared see if the fat, the casein, the sugar, the starch or proprietary food are at fault, and prescribe a **rational dietary**. **Drugs**

are valueless without such a dietary, and usually unnecessary with it. If in spite of appropriate milk percentages the infant is still dyspeptic and does not thrive, procure a **wet nurse**.

Deal with a severe case as directed for summer diarrhoea

CONGENITAL STENOSIS OF THE PYLORUS.

If an infant soon after birth persistently vomits its food and wastes, in spite of good breast milk or appropriate percentage milk mixtures, bear in mind congenital stenosis of the pylorus.

Make a careful abdominal examination, note whether the stomach is enlarged, and look for peristaltic contractions terminating at the pyloric end of the viscus. **A thickened** pylorus in the shape of a small tumour or a ring can sometimes be felt. Stenosis induces a secondary gastric catarrh.

The treatment is abdominal section and pyloro-plasty or other measures if the condition is obvious, otherwise restrict the quantity of the meals, treat gastric catarrh, and **watch** the case.

SUMMER DIARRHŒA.

(Acute Gastro-Enteric Infection and Cholera Infantum.)

Always treat infantile dyspepsia with respect, especially in the summer months, and prescribe a suitable dietary. Always disinfect soiled napkins in the summer.

- 1.—Do not over-feed; quench the thirst with cold water.
- 2.—Take especial care to prevent milk infection.
- 3.—Send the infant to the country if possible.

The principles of treatment are:—

- 1.—Clear the bowels as quickly as possible, by stomach washing, colon irrigation, and small frequently repeated doses of calomel.
- 2.—Starve for 24 hours, give ice water, with brandy, if necessary.
- 3.—When the acute symptoms have passed, give egg-albumin water, and subsequently beef-juice.
- 4.—Withhold cow's milk until the 3rd or 4th day, and then commence with .5 per cent. fat and .5 per cent. proteids, gradually increasing the strength.

In **cholera infantum** give hypodermic injections of morphine gr. $\frac{1}{60}$, and atropine gr. $\frac{1}{800}$, hourly if necessary, as a cardiac stimulant. If there is drowsiness and coma give alcohol instead. Replace the fluid lost by subcutaneous saline injections, gr. 45 ad Oj in the 24 hours.

DYSENTERY (Ileo-Colitis).

Do not mistake dysentery for intussusception — the elongated abdominal tumour, and freedom from fever in the latter distinguish them. In older children separate dysentery from typhoid fever by the absence of rose spots, enlarged spleen, and Wiðal's reaction.

The principles of treatment are the same as for summer diarrhoea. When the bowels have been thoroughly cleared give opium in small and oft-repeated doses, and when the acute symptoms have passed add tannic acid (5ss to the gallon) to the fluid used for irrigating the colon.

MELÆNA NEONATORUM.

The most common cause of gastro-intestinal hæmorrhage in the new-born is

asphyxia at the birth. Other causes are (1,) gastro-intestinal ulceration; (2), congenital malformations of the heart; (3,) pulmonary collapse; (4,) the haemorrhagic diathesis; (5,) septicæmia; (6,) cracks in the mother's nipples.

Expect anaemia and collapse, and if the loss be great, anaemic convulsions within the first few days of life. Blood is vomited and the motions are tarry. With pronounced symptoms the outlook is not hopeful. Treat on general principles.

APPENDICITIS.

Remember in young children the disease has to be differentiated from **impacted faeces** in the cæcum. In appendicitis pain is *constant*, not paroxysmal, and there is deep-seated tenderness in the cæcal region — the symptoms are otherwise the same.

Purgatives and enemata are **harmful**. Treat by rest in bed, poppy fomentations, opium (which is to be discontinued when pain has been relieved) and a restricted diet.

In the event of general peritonitis, or a localised abscess, a **surgical operation** must be undertaken at once.

It is important to ward off future attacks by attention :—

- 1.—To the digestion.
- 2.—To a daily evacuation of the bowels.
- 3.—To intestinal antiseptis.

CONSTIPATION.

Search for the cause ; it is either **topical**, **dietetic**, or **muscular**.

Topical causes.—Remember anal fissures, haemorrhoids, intra-pelvic tumours, congenital stricture, congenital dilatation of the colon.

Dietetic causes.—*In infancy.*—Is it dyspeptic? The stool is wanting in volume? Sterilized milk? The proteids are excessive? The fat is insufficient? Too much starch? The quantity of beef-juice or meat is insufficient? Lack of fresh air and exercise? A careless nurse? Refer to "Feeding of Infants." See page 13. *In older children* remedy insufficiency of meat, green vegetables, fruit and liquids, give whole-meal bread, and treat dyspepsia if it be present.

Muscular causes —Do not forget want

of habit as a prevalent cause. Proper habits must be acquired in early infancy; this is most important. During an action the feet must rest on the floor.

Intestinal atony may be caused by 1, rickets; 2, malnutrition; 3, in sequence to the specific fevers, typhoid fever for instance; 4, severe illnesses in general; 5, anæmia; 6, want of out-door exercise; 7, over purgation.

Massage should be given dry, and the abdominal walls should be rolled upon the intestines.

Suppositories, either plain or medicated, are useful in torpidity of the rectum and colon—judge of this by the rapid response to their stimulus, when that condition is present.

Enemata must not be used continuously—if that be done the quantities will need to be increased from time to time.

All active purgatives must be avoided. If the intestine be torpid prescribe **bella-donna**, **nux vomica**, **cascara**, or **hyoscyamus**.

Look upon all mechanical aids and drugs as **palliative**, and to be abandoned as quickly as practicable.

Cure is to be sought in dietetic and hygienic measures.

Be prepared for nervous symptoms from absorption of toxins by the intestines, in sequence either to dyspepsia or constipation—thus fever, headache, dullness, irritability, fretfulness, etc., must not be looked upon as indicating early **tuberculous meningitis**. **Indicanuria** is often present.

Congenital hypertrophy and dilatation of the colon. This is indicated by (1,) obstinate constipation for periods of many days or weeks, dating from infancy: (2,) great abdominal distension with vermicular intestinal contractions; (3,) wasting; (4,) a stuperose condition from toxæmia.

Avoid enemata. The production of a temporary artificial anus in the left iliac region in one case, has been followed by a cure.

INTESTINAL OBSTRUCTION.

If an infant passes no meconium, the rectum and anus being healthy, vomits milk and meconium, and develops abdominal distension, there is **congenital atresia of**

the gut. Remember **children** occasionally develop acute obstruction from constricting bands, but the usual cause is intussusception.

Intussusception. — Remember pain, vomiting, straining, and the passage of bloody mucus by the bowel, together with an elongated abdominal tumour, denote intussusception.

If no tumour be felt, make a rectal exploration and bimanual examination of the part under an anæsthetic. Bear in mind:—

- 1.—A short ileo-cæcal invagination.
- 2.—Impacted fæces in the cæcum.
- 3.—Appendicitis.

When in doubt avoid purgatives and enemata. Do not mask symptomis by giving opium. A history of ileo-colitis may be very similar, *i.e.*, screaming, vomiting, straining and the passage of blood and mucus. Diagnose by the inability to sweep the forefinger round the advancing body as an intussusception. What is felt is a very thickened mucous membrane.

Inject air, warm water, or warm olive oil, by means of a bellows or Higginson's syringe. If the tumour is apparently reduced, but the symptoms continue, make a rectal

exploration and bimanual examination.* Failure to reduce makes an abdominal section imperative. In most cases, however, the better practice is to perform an abdominal section at once without resorting to inflation or hydrostatic pressure. Pressure thus excited often reduces the majority of the tumour, but a small portion of the bowel fails to yield to this measure in very many cases. **In the acute cases operation must not be delayed a single hour after failure to reduce.** Afterwards give small doses of opium and a light diet.

ACUTE GENERAL PERITONITIS.

Remember pain, acute tenderness, abdominal distension, sickness, and constipation, are diagnostic of peritonitis, and that it is usually purulent.

Do not forget there may be acute abdominal pain in pleurisy and pleuro-pneumonia.

Do not mistake colic for peritonitis--

* On the value of rectal exploration as an aid to diagnosis in diseases of children, by the author. *Pediatrics*, Vol. I., No. 2, June 1st, 1896.

there are pain and distension, but no tenderness or fever.

Do not trifle with the case—the treatment should be surgical.

TUBERCULOUS PERITONITIS.

The abdomen is enlarged, its veins prominent, an absence of tenderness, but usually colicky pains, and, perhaps, a little fever. It occurs clinically as follows:—

- 1.—As **ascites** masking underlying mischief, or ascites with definite abdominal lumps, or slight ascites succeeded by lumps.
- 2.—As **definite abdominal lumps** from matting together of coils of intestines. Do not forget to give an enema before making the diagnosis.
- 3.—As **a sausage-like tumour** (tuberculous omentum) passing across the abdomen above the umbilicus, and sometimes associated with No. 2. From acute intussusception the signs of obstruction distinguish it, but with

chronic intussusception the motions may be natural—rely then on contractions in the tumour, and blood in the stools.

- 4.—As a localised **collection of fluid**, usually an abscess. Do not forget to empty the bladder. Bear in mind hydatids.
- 5.—As an **enlargement of the abdominal glands** in a grape-like mass. This is not common, but it is common for tuberculous adenitis of the abdominal glands to play a part with No. 2, together with tuberculous ulcers of the intestines.
- 6.—As a swollen, puffy abdomen, from miliary tuberculosis of the peritoneum

Remember infants with large abdomens, and flatulent distension from gastro-intestinal disturbances, are often **unwarrantably suspected** of having tuberculous peritonitis. Make a rectal exploration and examine bimanually, not overlooking the pelvic organs.* Abdominal tuberculosis may start from tuberculous Fallopian tubes and ovaries.

* See Footnote, page 86.

Treatment.—If ascites is extreme, use Southeys tubes. Abscesses must be treated surgically; otherwise Scott's dressing to the abdomen, the relief of pain by Dover's powders, and attention to the digestive powers and general health.

ASCITES.

Remember ascites, in the absence of general dropsy from heart or renal disease, is probably due to **tuberculous peritonitis**, and not to portal obstruction. Ascites may be secondary to cirrhosis of the liver or to malignant disease of the peritoneum; both conditions are, however, very rare.

WORMS.

Worms infrequently cause symptoms—worms are found in the dejecta. Worms may be associated with (1,) nervous derangements; (2,) dyspeptic. If in doubt search the dejecta microscopically for ova.

Bear in mind the tendency of thread worms to produce **vulvo - vaginitis** and **nocturnal enuresis**. Prevent their migration and re-infection by applying dilute

ammoniated mercury ointment to the anus. When they are in the cæcum an occasional saline cathartic is useful to bring them within reach of enemata. Give naphtholine (gr. xx daily) in malt extract.

Be careful with santonin; it is apt to cause toxic symptoms. Before prescribing it and male fern give a preliminary laxative: make the patient abstain for a few hours from food before taking the drugs, and two hours after their administration give a dose of castor oil to expel the parasites.

Search the stools carefully for the heads of tape-worms before pronouncing a cure. If the head is not passed, look for segments in three months' time.

DISEASES OF THE LIVER.

THE LIVER.

The liver in recumbent infants extends half an inch below the costal margin in the nipple line. The left lobe is large, and is a prominent feature of the infantile anatomy. The liver may be thrust down from rickety deformity of the chest, or fluid in the right pleura — remember this. **Enlargements** are common in infants and

young children. If during the first six months of life the liver is enlarged, and obviously **indurated**, organic mischief is present. Nearly half the cases of syphilitic infants have enlarged livers, mostly accompanied by splenic enlargements. Jaundice is, however, very uncommon in these cases. If the liver be not indurated the cause is probably chronic gastro-intestinal disturbance. In fat, pale, rickety children with pasty stools, the liver is probably fatty. Alter the diet, and administer salines.

JAUNDICE.

Icterus neonatorum. — Remember the stools contain bile. The infant may be expected to recover in a few days.

If the stools **from birth** are **free from** bile there will be a fatal termination in a few months at most. The condition is due to **congenital malformation** of the bile ducts. **Syphilis** also produces cirrhosis of the liver, and destruction of the bile ducts. **Ascites** may be a prominent feature in either of these conditions, and the spleen will probably be enlarged.

Catarrhal Jaundice occurs at all ages, after dyspepsia. The liver enlarges and, in

some cases, the spleen also. A slow pulse and cutaneous irritation are wanting. Treat the dyspepsia. Sulphate of soda is useful.

Acute yellow atrophy is a rare disease. In its initial stages it is like catarrhal jaundice. Subsequently the condition mimics tuberculous meningitis; ecchymoses and œdema of the feet and hands supervene. The absence of leucin and tyrosine from the urine does not negative the diagnosis.

Cirrhosis of the liver arising under six months of age has been mentioned. In older children remember alcohol, syphilis, and a sequence of scarlet fever and measles as causes. **Ascites** will probably be present, but ascites as a symptom suggests simple or tuberculous peritonitis, which are quite common complaints, or **mediastinitis**, secondary to pericarditis, rather than cirrhosis of the liver, which is very rare.

DISEASES OF THE SPLEEN, THE LYMPH GLANDS, THE BLOOD AND THE THYROID GLAND.

THE SPLEEN.

The spleen is best examined by palpation—it is not enlarged unless its lower edge

xtends below the costal arch. It may be isplaced by rickety deformity of the chest, y fluid in the left pleura, or by a large renal tumour.

Splenic enlargements in infants are quite common. They occur with greatest frequency during the first six months of life, and are at this period usually syphilitic. The next most prolific period is from the twelfth to the fifteenth month, with a marked decline by the eighteenth month; and they are still not uncommon to the end of the third year. From the fourth year cases are not numerous. From the twelfth month to the end of the third year most are found in combination with rickets.* After the eighteenth month syphilis does not appear to be an important factor in the production of splenomegaly. Splenic enlargements also occur in typhoid fever, tuberculosis, pyæmia, ulcerative endocarditis, cirrhosis of the liver, ague, lardaceous disease, leukæmia, and Hodgkin's disease.

* These remarks refer to English children, and are based on a study of 348 cases of splenomegaly by the author. They do not include ague cases. *Vide* splenomegaly in Infants and Young Children. Reports of the Society for the Study of Disease in Children, Vol. III.

Anæmia splenica.—The spleen is enlarged, and there is anæmia. This anæmia may amount to a deficiency of hæmoglobin, with an excess (100 % to 140 % or more) of red blood corpuscles. In other cases the hæmoglobin and the red blood corpuscles are both reduced. In the severe cases there are further changes, viz., in the red blood discs, which vary much in form and size, normoblasts and megaloblasts may be present. In some cases leucocytosis is present in varying amount. This may pass on to **anæmia pseudoleukæmia** of infants and young children. The spleen is large, often very large, polymorphous leucocytosis is marked, with occasionally a small number of myelocytes; red corpuscles polymorphous, nucleated and markedly diminished; marked diminution of hæmoglobin; glandular enlargements, if present, are trifling.

Leukæmia is a rare disease in childhood, though occurring even in infancy. In the **spleno-myelogenous** form there is extreme leucocytosis; the proportion of 1 to 15 red corpuscles is not infrequent, or much less than that. The red corpuscles are polymorphous, nucleated and markedly diminished in number, and there is marked diminution in hæmoglobin. Remember the special form of leucocyte. the myelocyte, in

varying proportions up to 35 per cent. of the leucocyte count or higher—the presence of neutrophile or eosinophile granules distinguishing it from the large mononuclear cells—marks the disorder. In the **lymphatic** form leucocytosis is not so pronounced, and the diagnostic point is the relative great increase of the lymphocytes. These in health do not exceed 60 per cent of the leucocyte count. The red corpuscles are polymorphous and reduced in number.

Hodgkin's disease is very rare in childhood. The spleen and liver are usually enlarged. There is slight reduction of red corpuscles, and moderate reduction of hæmoglobin, and an increase in the white corpuscles, particularly the lymphocytes.

Bear in mind that there may be a difficulty in separating this disease from **tuberculous adenitis**. Similar conditions of the blood may be present in both disorders. Should there be any doubt, microscopic sections should be made and examined for tubercle bacilli.

PRIMARY ANÆMIAS.

Remember **chlorosis** is occasionally seen in infants and young children. The red

corpuscles, which vary in size considerably, are nearly normal in number. The percentage of haemoglobin is low, and there is no leucocytosis.

Anæmia perniciosa is not a common disease in infancy and early childhood. Look for a very large reduction of red corpuscles, which are polymorphous and in part nucleated, together with the presence of numerous megaloblasts and a relatively high percentage of haemoglobin, *i.e.*, the colour index is high. This is the reverse of the condition in chlorosis. The leucocytes are not increased and may be diminished. A few myelocytes may be present. Arsenic in large doses should be given.

SECONDARY ANÆMIAS.

The constant features are oligocythæmia and oligochromæmia, with or without leucocytosis. Remember when leucocytosis is marked the anæmia is grave.

Secondary anæmias arise from many causes, and are severe or the reverse according to the nature of the primary disease. There is nothing characteristic about the anæmia attending rickets and syphilis.

The treatment of these anæmias is that of the diseases underlying them, and the elimination of defective hygienic conditions. A suitable dietary and plenty of fresh air are essentials. Iron, arsenic, cod-liver oil, hæmatogen, and inhalations of oxygen are of service. Guard against exposure to damp and cold, and avoid active muscular exercise in the very anæmic.

HÆMOPHILIA.

The condition is inherited through the female side, and the liability to severe haemorrhage, having once arisen, is likely to be repeated. The haemorrhagic tendency rarely shows itself before the second year.

Bear in mind haemorrhage may take place in the joints, originating symptoms suggestive of rheumatism. Do not forget the possibility of cerebral haemorrhage.

Remember in all bleeders the **most trivial injury, or trifling operation, must be guarded against.**

In the event of bleeding try 20 to 40 grain doses of chloride of calcium every 4 hours; the internal administration of this drug has arrested haemorrhage where the application of various local styptics, including adrenalin, has failed.

PURPURA.

Purpura is an acquired tendency to bleed, in contradistinction to **haemophilia**, the inherited. In **purpura simplex** the haemorrhages are confined to the skin; in **purpura haemorrhagica** blood is extravasated in the organs (*e.g.*, on the brain and in the brain), and escapes from the mucous membranes. It is sometimes a trivial complaint, but it may be rapidly fatal, with high fever.

Its causes are (1,) in association with the specific fevers, either prodromal or during their course (*e.g.*, variola and diphtheria), and due to albumoses and peptones in the blood; (2,) certain blood states, *e.g.*, scurvy, leukæmia, pernicious anæmia, Hodgkin's disease, syphilis, malignant endocarditis, pyæmia, septicæmia, tuberculosis, meningitis, tuberculous and simple, and frequently indicates a fatal termination; (3,) drug taking, *e.g.*, chlorate of potash, phosphorus and quinine; (4,) in the course of bronchopneumonia, pneumonia, empyema, ileocolitis, infantile atrophy; (5,) mechanical, *e.g.*, in sequence to whooping cough, asthma, and following walking, in the lower extremities, during convalescence after severe illnesses, *e.g.*, typhoid fever; and the bites

of insects, *e.g.*, fleas; (6,) in sequence to or in cachectic states, any acute illnesses and conditions of ill-health generally; (7,) as a **primary condition** without, in the present state of knowledge, any assignable cause.

It occurs in association with rheumatism occasionally. The name **peliosis rheumatica** has been assigned to a condition of rheumatism in which there is purpura, and also to a purpuric condition in which there are haemorrhages in and around the joints, and which is certainly not rheumatic.

A variety called **Henoch's purpura** is a febrile condition in which gastro-intestinal symptoms are a prominent feature—vomiting, diarrhoea, and colic, with the discharge of blood by the mouth and rectum, occurring paroxysmally, associated with a condition which **simulates** articular rheumatism. The complications are sloughing of the mucous membranes and skin, and myocarditis.

Whether certain of these cases of primary purpura are related to scurvy, or are scurvy—in the absence of spongy gums—is not yet determined, but certain it is that striking improvement is seen in some of these cases from the use of fresh fruit and vegetables.

SCURVY.

If an infant between six months and two years of age* moves the lower extremities with difficulty, holds them in a semi-flexed position, screams if they are touched, and the long bones are found to be thickened, without heat or redness, and the joints are normal, that infant has scurvy.

The infant may be fat and ruddy, and rickets is not necessary for its production.

Cutaneous haemorrhages sometimes accompany the condition, a not uncommon form being a "black eye," sometimes with proptosis. Haemorrhagic gingivitis is usually absent unless teeth have been cut. In severe cases there may be haemorrhage from the various mucous membranes and fever. **Separation of epiphyses** sometimes occurs.

Remember **haematuria** in infants is sometimes an early symptom of scurvy, and in older children it may be the only indication of that state, at least for some time.

* I have seen a typical case in a rickety boy 5½ years old, but this is a decided rarity. Reports of The Society for the Study of Disease in Children, Vol. II., pages 146 to 152.

The disease is produced by protracted feeding with improper food—usually condensed milk and proprietary foods in infants—the treatment is therefore dietetic, aided by orange juice.

CRETINISM.

(Congenital Myxœdema.)

Stunting of mind and body arise in sequence to **deprivation of thyroid secretion**. The gland may be absent, or enlarged, but if so it is functionless. Look for thick lips, a large tongue, thick and half-closed eyelids, thick cheeks, a broad, pale, stolid face and lustreless hair. The hands and feet are large and broad, the extremities stunted, the abdomen pendulous. The gait is clumsy, the movements slow and awkward. The skin is thick and dry, and the extremities are cold. Above and below the clavicles examine for subcutaneous deposits of fat. The mental deficiency is marked.

Give $\frac{1}{2}$ to 1 grain of thyroid extract thrice daily. Suspend the drug temporarily if there be a rise of temperature.

DISEASES OF THE URINARY SYSTEM.

THE KIDNEYS.

Bear in mind the kidneys may be fused—horse-shoe kidney—or one may be misplaced. Knowledge of these abnormalities will prevent mistakes in abdominal diagnosis.

Anuria in the new-born may denote congenital malformation of the urinary tract, or uric acid infarcts. **Dysuria** occurs in infants and older children from the presence of uric acid and urates. In both cases give plenty of water and citrate of potash.

Polyuria.—With this condition think of **diabetes**, **diabetes insipidus**, and **interstitial nephritis**. Thirst is a prominent feature. In diabetes the specific gravity is high and grape sugar present; in diabetes insipidus the urine is of low specific gravity and free from albumin; and in interstitial nephritis there is cardiac hypertrophy and usually albumin.

Lithuria.—Infants and young children frequently pass uric acid. Remember in infants there may be abdominal pain and drawing up of one leg from **renal colic**.

Examine the diaper for brownish red stains.

Albuminuria in new-born infants is unattended by symptoms, and is apparently physiological. The quantity of urine passed per day may appear to be somewhat excessive, and its specific gravity varies between 1001 and 1010. Casts may or may not be present, and if so they are hyaline, perhaps granular.

Remember it may indicate an intra-uterine nephritis, simple or syphilitic. Search for epithelial and blood casts. Hyaline and granular casts, apart from objective signs of kidney disease, such as dropsy, appear to be of no moment.

Albuminuria is **apt to occur at puberty**. It may be present during a part of the day only, **cyclic albuminuria**, and be increased by exercise. The urine should be centrifuged and examined for casts. If hyaline and granular casts be found, by far the safer plan is to view the condition as one of very mild nephritis, rather than run any risks by calling it functional. See page 107 (Chronic nephritis). Albuminuria sometimes arises during a prolonged course of arsenic and antipyrine: examine the urine of cases of chorea taking these drugs.

KIDNEY TUMOURS.

Remember the colon is pushed in front of kidney tumours, and colic resonance can usually be obtained. The liver lies in front, and the spleen also, unless it be pushed under the costal arch.

Sarcomata are the most common—they are rarely encountered after six years of age. They often grow to an enormous size. Haematuria is usually absent. They have a semi-elastic feel in parts, and are firmly seated in the loins. An exploratory puncture passes into solid tissue, or a blood cyst. The only treatment is surgical. Remember there are cases of recovery on record after operation, even in infants.

Hydronephrosis.—This is a congenital or acquired condition, arising in the latter case, perhaps, from the partial blocking of the ureter by a stone. Cases of double hydronephrosis usually die in infancy, mostly undiagnosed, and from some intercurrent complaint, or in sequence to the pressure cirrhosis. The signs are a fluctuating cystic renal tumour shown on exploration to have urinary contents (urea and urates). The tumour may vary in size from time to time along with the passage of larger quantities of water than usual. The treatment is surgical.

ACUTE NEPHRITIS.

Always **examine the urine** in all cases of ill-health, and especially in convulsions and coma. Remember the symptoms are not always classical—sickness, general dropsy and fever—they may be latent.

Do not think all cases of acute nephritis are **scarlatinal**. Diphtheria, measles, acute pneumonia, even extensive eczema can produce it, and it may be **primary**. Never neglect, however, to examine the skin for desquamation.

Remember acute nephritis in infants is not very uncommon. Be watchful for this condition in congenital syphilis.

The child may first come under observation with **great dyspnoea**; signs of acute **œdema of the lungs** as evidenced by coarse râles in the large tubes, and **rapid action of the heart** from dilatation of its cavities, its impulse diffuse and outside the nipple, and the first sound barely audible.

The **urine** is reduced in quantity, of high specific gravity, often bloody, and microscopically contains hyaline, epithelial, blood, and granular casts, also blood discs, renal

cells, and leucocytes. The urea is diminished.*

The general principles of treatment are the same as in adults. Be careful when using pilocarpine. It is likely to cause collapse, and a stimulant should be given beforehand to counteract this.

Never forget when ordering hot packs to instruct the nurse to take the temperature frequently. Hyperpyrexia is no imaginary danger. Be cautious in the use of warm baths and vapour baths. Oedema of the lungs from cardiac failure may be set up thereby.

Watch for dropsy of the serous cavities and peri-endocarditis, acute dilatation of the heart, and oedema of the lungs.

Keep all cases under observation for a long period; chronic nephritis may subsequently develop.

Remember general oedema, sometimes extensive, independent of renal disease, occurs in infants and young children. Mal-nutrition and anæmia are the causes. There is no albumin; give digitalis.

* The urea in health between 3 and 13 years varies between 200 and 325 grains a day.

CHRONIC NEPHRITIS.*

Never diagnose **functional albuminuria** because you find albumin in small quantity and only occasionally. The absence of albumin in the early morning and its presence later on is not characteristic of functional albuminuria. The same thing happens in some cases of chronic nephritis when the quantity of albumin is small so do not be misled by this. Examine the urine microscopically, and keep the child under observation for a long period. Is the heart hypertrophied? Is there any oedema of the lower extremities? If so the albuminuria is not functional.

Chronic parenchymatous nephritis is uncommon. The onset may be insidious, or follow an acute attack. The urine is somewhat diminished, of low specific gravity, with albumin in quantity, and hyaline, granular, and epithelial casts, with a marked preponderance of fatty elements. Look for **cardiac hypertrophy**. Dropsy is not always present. There may be albuminuric retinitis.

Beware of **intercurrent diseases**, pneumonia and pleurisy.

* Renal decapsulation has recently been credited with several cures of chronic Bright's disease.

Contracted granular kidney may be found even in infants. Interstitial nephritis is perhaps more often due to congenital syphilis than is supposed to be the case. It is most likely to come under observation as a case of **polyuria**, or suggest **asthma** by reason of paroxysmal dyspnœa, or advice be sought for **headache**. High arterial tension, an hypertrophied heart, thirst, urine of specific gravity under 1008 (it may be as high as 1015), albumin in trifling quantity or not at all (it may be considerable), hyaline and finely granular casts, and perhaps albuminuric retinitis will be found on examination. Cerebral haemorrhage is not uncommon. Death is by uræmia. Watch the heart and treat it, if necessary.

PYELITIS.

Remember the characteristics are pus in an acid urine, caudate cells by the microscope, and usually more albumin than can be accounted for by the pus.

Do not forget pyelitis may be combined with an adjacent nephritis—pyelonephritis.

In infants, fever, sometimes chills, may denote acute **primary pyelitis**. **Secondary pyelitis** occasionally occurs with the infectious fevers.

Tuberculous pyelitis is characterised by much pus and little pain—if advanced, by tubercle bacilli in the urine. Examine the genito-urinary tract for corroborative signs. Frequent micturition and a tender bladder suggest its involvement. Remember the disease may be limited to one kidney, and not unfrequently. Further, the kidney may be enlarged, and appear as a solid tumour of some considerable size. **Hæmaturia** does not occur unless there happens to be a stone. The treatment is surgical.

Calculus pyelitis is characterised by much pain and little pus—often microscopical—and hæmaturia, increased by exercise. Caudate cells are usually seen in quantity, being detached by the movements of the stone. The constant presence of uric acid or oxalate crystals, often in clumps, denote the character of the stone present.

Remember the symptoms in children are frequently indefinite, **umbilical** pains and pyelitis possibly, but they may be classical. The treatment is surgical.

PAROXYSMAL HÆMOGLOBINURIA.

Remember in this complaint there is blood pigment, albumin, and few if any red blood

discs in the urine. Oxalates are often present during the attacks—which are accompanied by fever, chills, or rigors—and in the intervals.

Spectroscopic examination of dilute solutions reveals two absorption bands in the yellow and green between the solar lines D and E. In strong solutions expect to find an absorption band in the red, with extinction of the rest of the spectrum.

Remember that exposure to cold destroys the red blood corpuscles and is likely to produce an attack.

Do not forget to examine such cases for the stigmata of congenital syphilis, and to make enquiries in regard to that disorder, and in the absence of evidence to bear in mind the possibility of future syphilitic developments.

Remember hæmoglobinuria may be associated with **Raynaud's disease** (see p. 130).

Bear in mind the specific fevers, and certain drugs also may produce hæmoglobinuria, and do not forget this when prescribing **chlorate of potash**.

HÆMATURIA.

If slight hæmaturia occurs in a child under two years of age think of scurvy—it is

the commonest cause at this period of life. The napkins are stained a bright or yellowish red, or there may be the passage of smoky or bloody urine. In older children haematuria in quantity may be the only indication of scurvy, at least for some time.

Remember in older children smoky urine, or urine with bright red blood in it, may mean **nephritis**. Do not omit to examine the urine for casts other than blood casts.

Exclude **haemoglobinuria** (*e.g.*, in Raynaud's disease), and remember in this condition there is blood pigment and albumin, and few, if any red blood discs.

Exclude all **topical causes**, *e.g.*, stone and villous growth in the bladder; also **constitutional causes**, such as purpura, haemophilia, scurvy, drugs, and the specific fevers.

When these have been excluded a certain proportion of cases remains where the haematuria is plentiful and of some duration, in which the cause cannot be determined; these recover by rest, good food and fresh vegetables, and are, I think, of scorbutic origin.

CYSTITIS.

This is not common. The urine may be acid or alkaline, The cells are much larger

than those from the renal pelvis, and are usually derived from the surface epithelium. In female children draw off the water by catheter, because the vaginal cells are much like those of the bladder.

Cystitis may be simple; but think of **stone**, foreign bodies, tubercle, and papillomata. Cells from the latter are very long and attenuated, the nucleus large and the widest part of them.

Irritability of the bladder sometimes appears to be of infective origin, and will yield to urotropin.

ENURESIS.

Remember enuresis is a symptom and not a disease. It may be **nocturnal** or **diurnal** or **both**, and it is either **organic** or **functional** in origin.

Functional enuresis may be due to :

- (1,) Instability of the lumbar nerve centres;
- (2,) Increased reflex excitability of the nerve centres;
- (3,) Want of development of the inhibitory centres.

Make a careful examination, and having excluded organic disease, such as malformations and central nervous lesions, eradicate all conditions which are likely to induce No. 1, viz., anaemia and malnutrition, and correct dietetic and hygienic faults. Exercise moral supervision; many are of a highly nervous temperament.

In regard to No. 2, remove all sources of reflex irritation, viz., stone, cystitis, vulvitis, hyperacidity of the urine, adherent prepuce, phymosis, worms, anal fissure and rectal polypus.

In regard to No. 3, in **all** cases exercise and stimulate the powers of voluntary control, so as to educate and strengthen the inhibitory centre.

Clearly understand there can be no routine method of treatment of enuresis. **Each case requires special study**, and an endeavour must be made to determine its cause.

In general, see that there is a nightly action of the bowels; do not give fluid after 5 p.m.; urine is to be passed before retiring to bed and once during the night, and the foot of the bed is to be raised.

Belladonna (10 minims every 2 hours),

atropine, and bromides may be given for the control of No. 1. Sulphonal or antipyrine will occasionally cure, but they must be used with care. Sometimes hyoscyamus and belladonna do good when belladonna alone will not. Curiously enough, occasionally urotropin does good.

Remember in any event the disease usually terminates at puberty, but it may persist in females. Bear in mind the possibility of epilepsy as a cause.

DISEASES OF THE NERVOUS SYSTEM.

BIRTH PALSY.

Birth palsy, due to effusion of blood over the motor areas of the brain, is often undetected during the first year. It is usually **diplegic**, sometimes **hemiplegic**. There is weakness and rigidity of muscles, with increased tendon reflexes. The mental condition may be unaffected, or the child is **idiotic**.

Cerebral haemorrhages occurring subsequently to birth are usually **hemiplegic**, and may be associated with mental changes.

Remember the treatment is **prophylactic**—to expedite delivery and to bring on premature labour when there is pelvic contraction.

When haemorrhage has occurred and the condition is quiescent, induce the child to try and use its paralysed muscles, and order a course of exercises.

Birth palsy of **peripheral origin** involves either the seventh nerve, or the upper two roots of the brachial plexus. In the face all three branches of the seventh nerve are involved, separating this from facial paralysis of **central origin**, which affects the two lower branches only.

In injury to the brachial plexus the arm hangs helpless, and movement of the upper arm is lost, but not of the forearm and fingers, and the triceps escapes. Separate this condition from paralysis of central origin by electrical muscles reactions, and from syphilitic ephysitis (see page 45), and from fractures, dislocations, and separation of the epiphyses. If the muscles respond to the faradic current expect rapid recovery; if there be reaction of degeneration, improvement will be slow and recovery may be impossible.

CEREBRAL HÆMORRHAGE.

This in infants and young children is nearly always due to the asphyxial state arising: (1,) At birth, when to the effects of asphyxia may be added those of pressure in difficult labour or by forceps; (2,) During eclampsic states; (3,) Asphyxial conditions generally, *e.g.*, in pertussis. The hæmorrhages occur: (1,) On the surface of the brain, mostly over the motor area; (2,) Into the substance of the brain. They lead to hemiplegia and diplegia and subsequent spastic conditions of the paralysed muscles if severe. Always therefore **view convulsions** and the asphyxial state in infants and young children, **with concern**, and relieve the condition as quickly as possible.

In older children cerebral hæmorrhage is usually secondary to the formation of an aneurysm on the cranial vessels in sequence to ulcerative endocarditis. Its subsequent rupture produces a meningeal hæmorrhage, or one into the substance of the brain, according to its situation.

Bear in mind **hæmophilia** and **purpura hæmorrhagica** as possible contributors.

HEMIPLEGIA.

Hemiplegia as a symptom is met with under the following conditions:—

(1,) Birth palsy ; (2,) Cerebral or meningeal haemorrhage subsequent to birth ; (3,) Embolism and thrombosis ; (4,) Aneurysm of cerebral arteries giving rise to meningeal or cerebral haemorrhage ; (5,) Cerebral tumour ; (6,) As an early sign of tuberculous meningitis ; (7,) As a sequel of simple meningitis ; (8,) Hysteria, associated with hemianæsthesia ; (9,) Chorea—look for choreic movements in the part and elsewhere, *e.g.*, the face, which distinguish it from athetosis ; (10,) Infantile paralysis—the electrical reaction of the muscles distinguishes this.

Carefully enquire into the history of the case, and make an exhaustive physical examination of the organs and the fundus oculi before deciding as to the nature of the lesion.

RETRACTION OF THE HEAD.

Retraction of the head is a symptom of no small import in children's diseases. It may be due to (1,) if dating from the birth, meningeal haemorrhage or an injury to the cerebellum ; (2,) chronic posterior basic meningitis of infants ; (3,) meningitis, tuberculous, simple, and epidemic cerebro-spinal ; (4,) tumours near the medulla ; (5,)

tetanus; (6,) tetany; (7,) rheumatism of the neck muscles; and (8,) functional.

The **functional causes** are gastro-intestinal irritation, worms, apex pneumonia, cervical adenitis, and acute otitis media. The contractions may be continuous or intermittent,

MENINGITIS.

Remember the symptoms of meningitis, tuberculous and simple, are much the same. In both they may be cerebro-spinal.

In **simple meningitis** the onset is *sudden*, in **tuberculous**, *slow*: but in children under 2, convulsions followed by coma are not uncommon

The disease is probably tuberculous if there is a family history of tubercle, and obvious tuberculous lesions elsewhere. It is always secondary to a tuberculous focus somewhere. Search the fundus oculi for choroidal tubercle.*

* For coloured plates of this condition see "Reports of The Society for the Study of Disease in Children," Vol. I., pages 170 to 177. Article, Tuberculosis of the Choroid, by Dr. George Carpenter and Mr. Sydney Stephenson.

Examine the blood. If there be leucocytosis it is simple, and it is simple if there is pneumococcal inflammation elsewhere, *e.g.*, pneumonia, pericarditis, and empyema.

Always examine the middle ear. Otitis may mimic meningitis, or accompany it without obvious connection. When pus with an unruptured drum is found, however, incise at once—the symptoms may disappear.

Do not confuse false hydrocephalus with meningitis. It is distinguished by a depressed fontanelle, and calls for stimulants.

Remember the onset of the specific fevers, infantile paralysis, and pneumonia are to be distinguished by the physical signs peculiar to these complaints; but also remember **meningitis may follow** them.

Also remember in chronic catarrh of the bowels in young children, there may be suspicious head symptoms from **toxæmia**.

Malaise followed by irregular vomiting, constipation, headache, intermittent fever—later a scaphoid abdomen, stiffening of neck muscles, irregular respirations, slow intermittent pulse, facial and ocular pareses, and slight optic papillitis, followed by convulsions

and coma, denote **tuberculous meningitis**. Do not be misled by a temporary recovery—the symptoms will recur and prove fatal. Remember lumbar puncture of the spinal canal may prove of service from a diagnostic point of view,* and this rule also applies to **epidemic cerebro-spinal meningitis**, which is difficult to separate from **simple meningitis**, the only exact means being by lumbar puncture and the detection of the diplococcus intracellularis.

Chronic posterior basic meningitis of infants is distinguished by the *extreme* retraction of the head. There are also rigidities, blindness without optic papillitis, moderate hydrocephalus, vomiting and wasting.

Bear in mind **retention of urine** in meningitis, and should there be difficulty in feeding use the nasal tube.

CEREBRAL TUMOURS AND ABSCESS.

The **general symptoms** of cerebral tumour or abscess are headache, sickness,

* Puncture is made between the third and fourth vertebræ, and a little outside the median line.

marked optic papillitis followed by optic atrophy and convulsions, especially if the tumour is in the motor cortex.

The local symptoms depend on the situation of the tumour.

The commonest tumours are **tuberculous**, sometimes associated with choroidal tubercle—occasionally sarcomata and gliomata. Syphilomata are exceedingly rare.

Cerebellar tumours are the most common. Primarily there is a weak and unsteady gait; later spastic rigidity and pressure on the sixth and seventh nerves—hydrocephalus.

Cerebral abscess is usually secondary to middle-ear disease, perhaps to pus elsewhere. Hectic fever and emaciation are in favour of an abscess rather than a tumour.

Tumours of the cortex, and abscess, if it can be diagnosed and located, may be amenable to **surgical treatment**. Bear this in mind. If there is a suspicion of syphilis treat as such.

HYDROCEPHALUS.

Do not mistake the large square-shaped rickety head, with its patent flat fontanelle, for hydrocephalus.

The **hydrocephalic head** is rounded, the fontanelle bulged, the sutures gaping, the bones thinned, and the eyes prominent and divergent from pressure on the orbital plates.

If hydrocephalus **commences in older children**, after closure of the fontanelle, it is probably secondary to a cerebellar tumour—marked optic papillitis is in favour of it.

Bear in mind some cases are **syphilitic**, and if there is any suspicion of such, anti-syphilitic remedies should be tried.

CHOREA.

Remember chorea is very rare under 3; it is likely to arise in those of a nervous type with a rheumatic family history, and multiple attacks are not uncommon.

Do not forget that **rheumatism precedes chorea** with frequency, develops with chorea exceptionally, and occasionally occurs while chorea is in progress. Rheumatic sore throat often arises. A large number of cases that have had chorea will develop rheumatism at some future date, if they have not already contracted it.

Remember in at least half the cases the mitral valve is undoubtedly permanently

injured, though it may require some lapse of time for its detection. Pericarditis occurs occasionally. Of those with heart mischief over 57 per cent. of my own cases were rheumatic.

Recollect **paresis** may be the prominent feature of the attack.

Do not mistake **habit spasm** for chorea.

Bear in mind **subnormal temperatures** are the rule. If there is a rise of temperature, apart from any obvious cause, suspect endocarditis.

The **psychical aspect** of chorea is denoted by inattention, forgetfulness, emotional outbursts, fatuity, and even dementia and acute mania.

In an **ill-marked case** tell the child to hold the arms above the head, and watch for unsteadiness.

Remember severe cases are always a source of anxiety. This is specially so if there is sleeplessness—a fatal event may happen.

Treat a very mild case by **tonics**, removal from school, and gymnastic exercises. For others **rest in bed** under the supervision of a stranger, and good food. If the movements are very severe sling the child

in a hammock. Do not keep the child indefinitely in bed—when there is marked improvement have it dressed on a couch and complete the cure by change of scene and gymnastic exercises. Treat sleeplessness by hypnotics.

Remove all sources of peripheral irritation, *e.g.*, carious teeth, worms, adenoids, enlarged tonsils, otorrhœa, etc.

HEADACHE.

In a young child suspect **organic** disease.

In older children remember digestive disturbances; anæmia; ametropia; migraine, markedly hereditary; neurasthenia; and hysteria.

Always examine the urine.

In all cases without obvious cause never neglect to have the refraction **carefully** estimated.

CONVULSIONS AND EPILEPSY.*

Convulsions under 3 years of age are probably reflex, after 3 probably epileptic.

* Recently Bra has detected a small sphere in the blood capable of appearing in the relation of diplocoecus or streptoœcœus, which appears in large numbers before a seizure, and is nearly always absent in the intervals.

In nurslings **search the cause**—usually gastro-intestinal. Inspect the motions and prescribe a suitable dietary. If at the breast, enquire carefully into the maternal habits.

Convulsions sometimes herald **febrile complaints**, less often meningitis and cerebral haemorrhage. Do not forget to examine the middle ear for pus, and the fundus oculi. Remember eclampsia may be due to the asphyxial state, birth and whooping cough for example.

Rickety dyspeptic children, especially those of neurotic inheritance, are liable to convulsions. **Beware** of the “teething” explanation unless this be obvious. In older children, if a convulsion invariably starts in one spot and precedes loss of consciousness, think of a **cortex lesion**. **Infants often** suffer from one-sided convulsions, and do not think on that account that there is brain disease of the opposite side. Do not forget to examine the urine; convulsions sometimes indicate **nephritis**.

Remember convulsions frequently repeated tend to mental degradation, or may be due to it.

For the effective treatment of **reflex convulsions** remove the cause, and relieve

severe convulsions as soon as possible for fear of cerebral haemorrhage.

Inhalations of chloroform or amyl nitrite may be administered while a dose is being prepared. Bromides and chloral can be given by the mouth or rectum, and the former can be pushed more than the latter. Of chloral 5 grains or less to a child 1 year and under may be given every hour and be repeated if necessary several times, but bromides of potassium or sodium can be pushed without fear. Enemata should be given in small bulk, half an ounce, and thickened with gruel or starch, and injected high up in the rectum through a short catheter. Oxygen inhalations should be administered if there is cyanosis.

For epilepsy restrict butcher's meat, keep the bowels open, prescribe suitable hygiene and a little mental work, and give a prolonged course of bromides. If due to cortical irritation, surgical treatment must be considered.

HEAD NODDING, HEAD ROLLING, AND HEAD BANGING.

Head nodding or head rolling movements in infants and young children are constant

or intermittent in operation, and take the form of movements of assent or dissent. In the latter the hair is worn off the occiput. These movements are often associated with nystagmus. **Head banging** may be indulged in at any time, but usually takes place on the pillow at night time. Head bangers are often rickety.

These conditions may be looked upon as an evidence of nervous instability, and the children spring from a nervous stock.

Search for some reflex irritation; the ear, the nose, the mouth, and the alimentary canal should be examined.

Salaam spasm indicates either epilepsy or organic intracranial disease, and is not to be confused with head nodding, which is confined to the sterno-mastoid muscles, and does not extend to those of the trunk.

NYSTAGMUS.

Quick vibrations of the eyeball of short excursion, either from side to side or up and down or semi-rotary, occur in infants and young children as a result of (1,) ocular defects; (2,) intracranial defects, congenital or acquired; (3,) tetany; (4,) convulsions; (5,) functional disturbance, often associated

with head nodding (*vide* "Head Nodding," page 126). The nystagmus associated with head nodding generally disappears before the child reaches the age of two years. True congenital nystagmus persists; it may occur in several members of the same family, and in two or three generations.

NIGHT TERRORS.

(*Pavor Nocturnus et Diurnus*).

Night terrors are very common in neurotic children and those habitually exposed to over-excitement. The child wakes up in the night screaming, has hallucinations, does not know its relatives, and is bathed in perspiration, its whole aspect being indicative of extreme terror. In the course of time it regains consciousness and falls asleep.

Treatment: (1.) Enquire into the habits and remedy all hygienic and dietetic errors; (2.) Treat gastro-intestinal troubles, should they exist; (3.) If the child is being terrified by blood-curdling stories or compelled to go to bed in the dark, remedy this; (4.) Bromides, belladonna, and sulphonal or antipyrine used with care are useful.

HYSTERIA.

Do not forget hysteria occurs in children of both sexes, particularly when they are nervous, anaemic, and of neurotic parentage, though it is very unusual under six years of age.

Remember hysteria mimics many diseases, and it is only by careful physical examinations organic disease can be excluded. On the other hand, do not forget hysterical symptoms may be grafted upon organic disease.

APHASIA.

If a child is **late in talking** it may be due to (1.) Idiocy; (2.) Retarded development (*alalia idiopathica*). If the child is bright and intelligent in all other respects it should undergo a systematic course of instruction.

Acquired aphasia may be (1,) Organic, and due to blocking of the middle cerebral artery, or a tuberculous tumour in the left third frontal convolution: (2,) Functional, occurring after some specific fever, usually typhoid fever, or as the result of a nervous breakdown.

SOMNAMBULISM.

This is more common in girls than boys—it is usually an hysterical phenomenon, and somnambulistic children are likely to become hysterical later on.

STAMMERING.

This is often hereditary, and occurs mostly in boys with a neurotic inheritance. The children should be taught the oral method of instruction in articulation, that used for the education of deaf mutes.

RAYNAUD'S DISEASE.

Attacks of defective circulation in the fingers and toes, and other outlying parts, may appear as early as the second year. The primary stage is that of arterial spasm (local syncope); the fingers and extremities become "dead." This is succeeded by returning circulation or by paralytic distension of the blood vessels (local asphyxia).

Paroxysmal Hæmoglobinuria may be associated with the attacks, see page 109. Recovery is usually complete, but local

gangrene may occur, with the destruction of fingers, toes, and other parts. A syphilitic history can be obtained in some cases. To prevent attacks protect from cold, and during the attacks treat on general principles.

DEAF MUTISM.

This may be either **congenital** or **acquired**; congenital from imperfect development or intra-uterine inflammation of the middle and internal ears, and acquired, from inflammatory processes in the same parts in infancy and early childhood.

If deafness occurs before the age of 6 years the child is likely to become a mute.

Never neglect therefore to keep careful watch over the ears of all infants and children suffering from acute infectious diseases.

Timely incisions in the drums and careful after-treatment with Politzer's bag, will ensure their healing and prevent many a blighted future. Remove adenoids and large tonsils early, check post-nasal catarrh, and promptly treat eustachian inflammation should the necessity arise. By such means preventible cases can be greatly diminished.

For those who can hear somewhat,

educate by the combined voice and oral system; when there is no useful hearing, by the oral system and by the use of finger signs. Training should commence at 7 years of age.

PARAPLEGIA.

Think of myelitis and tumour, spastic cerebral paralysis and hysteria; but the commonest cause is from pressure on the cord by the inflammatory products in spinal caries.

Remember there may be no local pain, no deformity, and marked paralysis; angular curvature is not necessary to its production. It may consist of weakness of the extremities and paræsthesia, or of paralysis and rigidities.

Spinal Caries.—The subjective symptom is **neuralgia**, which begins quite early. Thus there may be occipital headache, girdle pains, pains at the umbilicus and epigastrium, and shooting pains in the limbs. Examine for hyperæsthesia and anæsthesia. **Always trace any obscure pain along the course of the nerve to its origin.** Shingles may denote spinal caries.

If the child holds its head and neck stiffly think of spinal caries—separate this condition from **cervical adenitis**, **rheumatic torticollis**, and **wryneck**. Note the way it picks up an object from the floor: **the fixed spine**—the crouching attitude suggest the complaint. In cervical disease the head is supported by the hands, in dorsal disease the weight is supported by the elbows. Search the abdomen carefully for evidence of psoas abscess.

The sharp angular deformity of the spine, which cannot be straightened, is quite characteristic.

When the cervical and dorsal regions of the cord are involved there is paraplegia, with increased tender reflexes, and rigidities; and when the lumbar region is compressed look for absence of tendon reflexes and incontinence of urine and faeces. When the cervical and lumbar enlargements are invaded (focal myelitis) expect wasting of muscles and the reactions of degeneration.

Paralysis usually recovers within a year.

INFANTILE PARALYSIS.

This is quite common under 3 years of age. Its onset by fever and convulsions is not pathognomonic, but the rapid appearance

of paralysis with loss of superficial and deep reflexes is suggestive. Wasting of muscles with electrical reactions of degeneration confirm it. The disease may be extensive, affecting even the intercostals and diaphragm. Do not confine your examination to the limbs, but inspect the trunk as well—lesions there are often overlooked. Involvement of one limb is common, and often a group of muscles in that limb, mostly about the shoulder and below the knee. When the recovery is partial, subsequent contractions and deformities arise.

Separate from **transverse myelitis** and **cerebral paralysis**. In the former there is loss of sensation, but no wasting of muscles, and subsequently the reflexes return and are exaggerated. In the latter there is no wasting, and no loss of electrical irritability.

The principles of treatment are : (1,) Rest in bed with, when the fever has disappeared, gentle massage ; (2,) in a month's time the continuous current daily, sufficient to cause contraction of the paralysed muscles ; (3,) To persuade the child to try and use its own muscles ; (4,) The subsequent treatment of deformities and paralytic conditions surgically by muscle grafting and the section of tendons.

TETANY.

Tetany is an associate of laryngismus stridulus and convulsions, arising in a child of neurotic inheritance, and is usually due to **gastro-intestinal disturbances**, often occurring in rickety children, from the absorption of toxic substances into the circulation. It may occur as the **sequel of an acute infectious disease**, and think of **round worms** as an occasional excitant. The muscles are stiff and contracted ; look for the so-called accoucheur's hand—the thumb may be turned into the palms and the fingers clenched over them. In the foot look for hollowing of the sole, flexion of the toes, perhaps *talipes equinus* or *equino-varus*. Puffy swelling of the backs of the hands is an early symptom, and oedema may be extreme.

In severe cases the head may be retracted and the masseter muscles fixed, the jaws being closed, but these are **late symptoms** and different to the onset of **tetanus** (see page 47).

There are periods of **complete relaxation of the muscles**, and when present the contractions vary in intensity.

Note the **excitability of the facial**

nerve to mechanical stimuli. When the finger is drawn sharply across the face from the temple to the chin, watch the contractions of the facial muscles.

The painful muscular contractions are controlled by chloral and belladonna in full doses. Chloroform inhalations may be given in very severe cases. Treat the gastro-intestinal disturbance by intestinal antiseptics.

NEURITIS (MULTIPLE).

The most frequent cause is diphtheria; but it may follow influenza, rheumatism, measles, typhoid, and other fevers.

In post-diphtheritic neuritis, the earliest signs—as a rule—are passage of fluids by the nose, and a nasal twang to the voice from paralysis of the soft palate. The legs are weak, the patellar reflexes absent. In some there is paralysis of accommodation and of the sixth nerve. It may be very extensive, affecting the intercostals and diaphragm.

Think of arsenical multiple neuritis, and look for pigmentation on the abdomen, the axillæ, and the breast for corroboration.

FACIAL PARALYSIS,

This occurs as a birth accident from pressure on the 7th nerve by the forceps or the maternal parts. **All branches of the nerve are involved.** It is possible for a small cortical hæmorrhage to produce facial paralysis **only**, but when it is due to intracranial hæmorrhage it is usually associated with **hemiplegia** or **monoplegia**. In either event it is of the central type. **Protect the eye from injury.** If it has not recovered within three weeks, commence electricity.

In older children it is either (1,) The so-called rheumatic, from exposure to cold ; (2,) Secondary to otitis media, and usually with otorrhœa and caries of the petrous bone. It may be secondary to syphilitic osteitis of the petrous bone ; (3,) Due to an intracranial tumour or basilar meningitis, and then the auditory nerve is usually implicated ; (4,) In association with intracranial lesions above the pons—it is then of central type, the lower half of the face is involved, and the electrical reactions are unaltered ; (5,) traumatic.

The electrical reactions resemble those of other forms of neuritis. Facial paralysis may not be obvious when the child's facial

muscles are at rest. If an infant, tickle the soles of the feet to make it emotional. In incurable cases anastomosis of the facial nerve with the spinal accessory nerve has been attended by partial success.

PROGRESSIVE MUSCULAR DYSTROPHIES.

(Hereditary Primary Myopathies).

Hypertrophic Form.—If a child is late in walking, waddles, easily falls and rises with difficulty, aided by neighbouring articles of furniture, it may be from weakness due to rickets. Suspect, however, in such a case pseudo-hypertrophic paralysis, and examine the calf muscles, which may be found enlarged. Later expect atrophy of the thighs, the deep muscles of the back, the shoulders and the scapulae, and subsequent contractures, producing talipes equinus, flexures of the knees and hips, and lateral and angular curvatures of the spine.

The knee jerks disappear as the disease advances. Quantitative changes in the electrical reactions occur, but never the reactions of degeneration, and there are no fibrillary contractions. Sensation is normal.

Atrophic Forms.—There is no stage of hypertrophy. In one type the face is primarily involved along with the shoulder muscles, in the other the face escapes.

Progressive Muscular Atrophy of Youth (Erb's Juvenile form).—The disease begins in late childhood, is characterised by progressive atrophy of the muscles of the shoulder, the upper arm, the pelvis, thigh, and back. Hypertrophy in the deltoids, and supra and infra-spinati muscles may be associated with atrophy.

Separate these conditions from progressive muscular **atrophy of neural origin** (peroneal or leg type), which is also inherited, and involves the peroneal and foot muscles and induces contractions of opposing muscles, leading to club foot. The upper extremities and the body are rarely affected until late in the disease.

The reflexes are diminished or lost. Electrical reactions are much diminished. Fibrillary contractions are present.

Separate also from progressive muscular **atrophy of spinal origin** (amyotrophy), in which there is (1,) usually, absence of heredity; (2,) marked quantitative electrical changes, but sometimes the reaction

of degeneration ; (3,) Fibrillary contractions in unaffected muscles.

The slow progressive wasting of the muscles is usually in the following sequence :—Thenar and hypothenar muscles, interossei and lumbricals, the extensors and flexors of the fore-arms (*main en griffe*), next the deltoids, then those of the upper extremities, next the trunk, and finally those of the lower extremities. The trapezius and face muscles are among the first to be attacked.

DISEASES OF THE SKIN.

GENERAL INSTRUCTIONS.

1.—Many rashes are invisible or difficult to detect in artificial light.

2.—Never jump to a conclusion from inspecting a small cutaneous area ; you are likely to be wrong. The nature of the disease can only be correctly determined by examining all parts ; thus never omit to make a thorough medical examination as a matter of routine. There may be albuminuria, and with it (though very exceptionally) a measly eruption from uræmia ; or perhaps sugar (though very rarely), which

may account for a crop of boils. Apart from these quite exceptional conditions, the state of the general health demands attention.

3.—In treatment there are two pit-falls to avoid, viz., (a), the policy of resting content to "let well alone," on the assumption that "teething" is responsible; and (b) the error of supposing that there is any danger from "driving-in rashes;" on the contrary all rashes should be cured as quickly as possible.

4.—**Do not prescribe arsenic** without thoroughly examining the patient, in the hope that it may do good; it is much more likely to do harm. Such a random method of prescribing is as vicious as countenancing proprietary foods for the relief of infantile dyspepsia induced by ignorant feeding. Arsenic, in any event, should **never** be given in **acute inflammations.**

5.—Endeavour to distinguish the character of the **primary** dermal lesions, *e.g.*, macules, papules, vesicles, bullæ, pustules, nodules, wheals, etc. If large areas of the skin are involved find out what contributes to their formation: primary lesions will be found at the margin or outlying territory. Next as to the character of the primary lesions; are the papules round, angular,

acuminate, flat-topped, blood-capped, or is there anything special about them to attract the eye? The vesicles or pustules; are they tense or flaccid, or flattened or umbilicated, and is there underlying cutaneous infiltration or ulceration, or not? Never neglect an opportunity to train and improve your powers of observation. Crusts, scabs, scales and scratch marks are **secondary** conditions.

6.—**Note the grouping** of the primary lesions. Is the eruption **general** (urticaria papulosa) or **local** (pediculosis capitis)? Does it chiefly involve the **flexor** (e.g., syphilis) or the **extensor** aspects (e.g., erythema nodosum)? Does it affect any special localities? e.g., as in psoriasis and seborrhœa? The study of the topography of dermatoses will be found to give great assistance to diagnosis. Is it **fused** (scarlatina) or **spattered** (varicella) in distribution? Is there anything characteristic about the grouping, e.g., a cutaneous nerve mapped out? What is its colour, e.g., the rash of measles is violet, rubella is rosy, and syphilis is raw-ham coloured or coppery. Is the eruption accompanied by fever, or is it a **a-pyrexial**? Are there constitutional symptoms, and are they mild or severe? Is polymorphism a characteristic? Is the skin

itchy? Obvious scratch marks and blood-tipped papules will answer that question in the affirmative. How long has the rash been present? Lastly, what is the personal and family history?

7.—**Always** search for a cause. General eruptions usually point to some haemic condition; but not always, infantile scabies for instance, which is an example that a parasitic disease may be general and symmetrical in distribution. A local eruption suggests some topical disorder, lupus (tubercle bacillus) for example; but not invariably, as is shown by the apparently identical syphilitic eruption.

8.—Take a few illustrations. Varicella, urticaria papulosa, and scabies are disseminated, polymorphous cutaneous eruptions attended by more or less itching, the skin in the latter cases being especially irritable. Varicella is sudden in onset, enteric-fever-like rose-coloured papules appear on the first day, constitutional and febrile symptoms are mild, the eruption comes out in daily crops which can be demonstrated on inspecting the skin, some of the vesicles and pustules are umbilicated, the head and face are attacked, and sometimes the mucous membranes (to distinguish from variola see

page 51). *Urticaria papulosa* (often simultaneously *vesiculosa* and *pustulosa*) is sudden in onset but chronic in its course; it is a-pyrexial, constitutional symptoms are non-existent though there may be slight gastro-intestinal disturbance, the mucous membranes are not involved, and itching is a prominent feature. On inattentive or casual examination it resembles scabies, but there are no burrows or acari, the disease is not communicated to other persons in intimate contact, and the face and head are involved, which is not the case with scabies unless it be contracted at the breast. *Lichen planus* is very rare in children and the face escapes. Again, scarlatina-like eruptions may signify so many various conditions, and scarlet fever must not be diagnosed **on sight**. Such an eruption may indicate scarlet fever, or rubella, or herald the approach of some one of the specific fevers, variola for example, or perhaps denote septic absorption from the throat during the course of diphtheria, or perhaps erysipelas. Such rashes are pyrexial, the constitutional symptoms associated with them are severe or the reverse, according to the nature of the malady. The onset of symptoms in association with the rash, the seat of the rash, the presence or absence of tonsillitis, all must be taken into account.

Perhaps the eruption is a-pyrexial, but very like scarlatina even as to the seat of the eruption, *e.g.*, belladonna poisoning. But here, although the throat is dry, there is no tonsillitis and the pupils are large. Perhaps the proof is forthcoming on enquiry that the child has been given some drug, *e.g.*, chloral, or the infant is new-born and the condition of the skin is post natal and physiological, or it may be due to the injection of antitoxin, or to the administration of an enema prior to a surgical operation, and give a scare from its resemblance to scarlet fever. A-pyrexial and pyrexial erythema from intestinal auto-intoxication by ptomaines in chronic constipation and dyspeptic conditions is not at all uncommon. Here a correct history will prove of value, as also the presence of indicanuria.

Erythema scarlatiniforme may exactly resemble scarlatina, but constitutional disturbance is slight, and the temperature is rarely over 101° F. There is faucial redness, and some desquamation follows. This rash is generally sharply defined in places, and white strips of uninvolved skin extend between islands of vivid redness, a condition which does not exist in scarlatina.

So too measles eruptions. A measles rash

does not denote measles, or rubella; it is the associated signs and symptoms and history of the attack, that indicate the nature of the disorder. Many drugs cause this condition, which is then a-pyrexial and quickly recovered from on their discontinuance. There is nothing special or characteristic about urticaria in older children. It is the cause that is the important thing to be discovered. Thus it may be due to the surreptitious consumption of tinned lobster by the school-boy, or his too intimate cutaneous acquaintance with that variety of caterpillar known as the woolly-bear. In the one case there will be constitutional symptoms, perhaps very severe, and in the other they will be absent.

9.—Localisation is of great importance in forming a diagnosis. Thus an acute eruption which maps out the course of a cutaneous nerve can only be shingles, even though the eruption be papulous or erythematous and therefore abortive, the inflammation not being sufficiently intense to ensure the typical production of the vesicular stage.

Appearances are deceptive in dermatology, as in other relations of life. Thus the innocent-looking patch of chronic eczema

may owe its origin to the acarus scabei, and the head affected with what appears to be simple scurf, to the operations of the tricophyton fungus. The patch of lupus is indistinguishable from the patch of tertiary syphilis, but the former is distinctly chronic in its course and the latter comparatively acute, with the addition of notched, pegged teeth and interstitial keratitis, and the rapid improvement under antisyphilitic treatment decides the question. Sufficient has been said to indicate the general principles and methods necessary to arrive at a correct diagnosis, and to impress upon the reader that many dermatological troubles are merely symptomatic of some internal derangement or external irritant, the detection of which will materially aid the treatment.

10.—**Remember** that in many cutaneous eruptions the fingers play a prominent part in keeping up irritation and in conveying infection from one part to another, and amongst the poor bear in mind **contaminated clothing** and the ravages of bugs and fleas, etc., are important factors.

11.—Certain cutaneous applications must be used with discretion. Thus carbolic acid and tar and their preparations must be watched, and the urine should be examined

from time to time. Mercury should be applied to large areas of the body with caution, for fear of absorption. Be very careful not to treat extensive cutaneous areas with glycerine-jelly paints, or other impervious dressings; high fever, convulsions and death may follow.

PYOCOCCAL DERMATITIS.

The pus-forming organisms (staphylococci and streptococci) induce several varieties of skin disease, viz., **Impetigo Contagiosa**, **Catarrhal Dermatitis**, and **Furunculosis**. Adenitis and glandular abscesses are occasional sequelæ. Note the association of various eye affections from pus inoculations, e.g., conjunctivitis, phlyctenular ophthalmia, and corneal ulceration.

Impetigo Contagiosa. A vesico-pustule arises at the seat of inoculation, and spreads peripherally, forming in its course a flattened bulla, the contents of which coagulate. Yellow gummy-looking crusts, with outlying vesico-pustules scattered about the parts, quickly follow. The crusts are superficial, and appear as if stuck on the skin, but in unhealthy children there may be underlying ulceration. The favourite situation is the face, but lesions may occur

anywhere. Look for inoculations on the fingers, which may be present.

Impetigo Contagiosa Bullosa is a variety attended by the formation of well-filled bullæ, sometimes of large size; separate from **Congenital Syphilis** (see page 44), and **Pemphigus Neonatorum** (see page 150).

Catarrhal Dermatitis. Common situations are the face, the folds of the skin and the flexures (**Intertrigo**), but it may occur anywhere. The skin is reddened, cracks and weeps, and becomes more or less crusted according to the intensity of the process. In the folds there is rawness, perhaps ulceration, and the sides are red, dry and scaly. Vesico-pustules are often seen at the periphery.

Furunculosis. It is important to separate this condition from the "blind boils" of **Syphilis**, which are chronic and coreless (see page 158).

Treatment:—(1) Remove crusts by soaking them in carbolic oil, 1 in 40; (2) apply metallic ointment*, or other parasiticide

* Metallic ointment—Zinc ointment diluted, Nitrate of Mercury ointment, and Glycerine of Sub-acetate of Lead, in equal parts.

ointment, and never allow the parts to dry and crust; (3) prevent scratching by mechanical means if necessary, if using tar or carbolic acid in the ointments to allay irritation look to the urine occasionally for carboluria; (4) remove contaminated clothing, search for the source of pus supply, *e.g.*, pediculi capitis, otorrhœa, vaccination, ozæna, traumatism, other children, etc.; (5) evacuate the contents of full bullæ, strip the dead cuticle, and see that the ointment reaches the spreading margin; (6) Intertrigo must be remedied by preventing the apposition of parts by dressings; (7) if there are pediculi capitis and crusting, cut the hair short and treat the pediculosis.

PEMPHIGUS NEONATORUM.

Bear in mind two causes for this—(1) **Congenital Syphilis**; (2) as an epidemic, or occurring sporadically from staphylococcus or streptococcus invasion of the skin, *e.g.*, an abscess of the mother's breast. That due to congenital syphilis (*vide* Syphilodermia, page 156), appears on the hands and feet, not so the other variety. The attacking of the face has no diagnostic significance.

SEBORRHŒA.

There are two varieties of Seborrhœa—(1) **Seborrhœa Sicca**; (2) **Seborrhœa Oleosa**. Seborrhœa always **begins** on the scalp, and the hair there is often scanty and brittle. The area on which the greasy crusts or scales rest is usually hyperæmic and scattered, papules often surround these areas. A seborrhœic area is likely to become infected by pus cocci, and there will then be superadded suppuration under the crusts, and patches of **Impetigo Contagiosa** or **Catarrhal Dermatitis**. The scalp, the face, the sternal and interscapular regions, and the waist-band area, are **favourite** situations, but it may be found anywhere except the palms and soles. Separate the condition on the limbs and trunk from **Psoriasis**; in the latter the scales are silvery-looking, drier, harder, and reveal punctate haemorrhages in the cuticle when they are scratched off; there is no history or appearance of seborrhœa capitis; the skin over the patellar ligaments and over the olecranon is involved.

Treatment:—(1), Remove crusts by soap and water; (2), keep the hair cut short, and do not mistake ringworm for the condition; (3), use sulphur ointment, 10 grains to the

ounce, whieh is to be well rubbed in for ten minutes night and morning, and increase its strength as its rubefacient qualities diminish; (4), treat suppuration as recommended under Pyoeccal Dermatitis.

GANGRENOUS DERMATITIS.

This is a eondition in whieh sharp punched-out ulcers, the size of a pea or more, with black sloughy-looking bases, appear on the sites of vesico-pustules and pustules. It indicates a very serious eondition of ill-health, and may arise in the eourse of **Varicella** and **Impetigo Contagiosa**, and I have seen it with Iodide and Bromide eruptions. A eertain number of cases in which it occurs are suffering from miliary tuberculosis. Pay speeial attention to the general health.

TINEA TONSURANS ET TINEA CIRCINATA.

Ringworm of the scalp when typical is unmistakable, but remember pustular dermatitis and scabbing may be present. Sometimes there is a condition of the sealp

that looks like scurf (*Tinea Tonsurans Disseminata*) and without obvious loss of hair. This is very likely to happen in treated cases that are supposed to be cured. Exercise great caution therefore before giving a clean bill of health, and repeated examinations should be made with a lens in search of broken hairs. Scurfy patches in the treated, even with a strong crop of hair, are very suspicious. A hair stump or scraping from a suspected part, should be soaked in caustic potash for half an hour, and examined for spores and mycelium under a high power of the microscope. **Trichophyton Microsporon** has small spores and a scanty mycelium, it is responsible for two-thirds of the cases of *Tinea Tonsurans*. **Megalsporon** has large spores and plenty of mycelium, and is more readily cured; most cases of *Tinea Circinata* are of this variety. *Tinea Circinata* is common enough, but it must not be confounded with a **Circinate Syphilide**, which is more sharply defined, a darker red, and free from mycelium and spores.

To treat *Tinea Tonsurans*—shave the head, or keep the hair very closely cropped; wash the scalp with soft soap and water at least thrice a week; well rub in the parasiticide (a 5% oleate of mercury ointment made up with

lanoline and olive oil, is useful) for ten minutes thrice daily; in the interim to wear a well-fitting linen skull cap, to be frequently destroyed and replaced, and to avoid contact with other children. Systematic epilation is of assistance, and give tonics should they be required. In intractable cases artificial **Kerion** may be produced by the application of croton oil. Do not cover a larger area than a 2/- piece. Apply once daily, and follow the application by poultices. When the skin is red, swollen, and boggy use boric acid fomentations and extract the hair stumps. The cure is then usually complete over that area.

SCABIES.

The eruption is scattered and polymorphous, and consists of papules, vesicles, pustules, scabs and scratch marks; it may suggest **Urticaria Papulosa**, and which may co-exist as an epiphomenon. If an infant be infected at the breast its face and head will be involved; examine the mother's breasts and her hands and arms for an eruption. In older children see if other members of the household are attacked. The conclusive proof of the disorder is the detection of the female acarus in its burrow.

Search for burrows between the fingers, the flexures of the wrists, the buttocks and the genitalia, and in infants the insides of the hands, the soles and insides of the feet.

Treatment:—Give a hot bath at night, and well wash the body with soap; well rub in a mixture of equal parts of Sulphur and Metallic ointments all over the trunk and limbs; place the child in clean clothes and in a clean bed; wash off the ointment in the morning, and powder the skin with equal parts of oxide of zinc, boric acid, and starch powder; and pursue this treatment for two or three nights in succession. Boil the infected clothes, and treat those that will not wash by super-heated steam disinfection.

PEDICULOSIS.

A pustular eruption confined to the occipital region denotes pediculi capitis; it is often easier to detect nits than discover lice. In children with Impetigo Contagiosa always examine the scalp for pediculi and nits. Pubic lice are not very uncommon in the eye lashes in hospital practice. There are punctate haemorrhages along the roots of the eyelashes where the lice are fixed, and

the ova and excrement are more obvious than the lice on inspection.

For pediculi capitis soften the crusts with carbolic oil, 1 in 40; apply ammoniated mercury, 20 grains to the ounce of vaseline for several days; for the removal of nits sponge the hair with vinegar and use a small-toothed comb.

ECZEMA.

True eczema, the catarrhal dermatitis which arises solely from causes within the body, a blood disorder, is a very rare affection in children. The so-called eczemas with them are pyococcal disorders arising from pus inoculations or grafted upon an antecedent seborrhœa. Should there be true eczema its treatment is similar to that adopted in adults.

SYPHILODERMIA.

Remember the favourite symptoms for syphilitic eruptions in infants are the buttocks and their neighbourhood, and the face and the neck, but they may be generalised. The tendency is towards polymorphism. The colour of eruptions when chronic is of lean

ham (purplish), or yellowish or brownish. Note the tendency on the buttocks, the thighs, the legs, and the face for isolated lesions to coalesce into large areas, the initial lesions outlying these. Observe that the eruption is **not** confined to the diaper area, but extends beyond it, on to the abdomen and back, the thighs and calves, and perhaps the feet. On the arms and forearms there are possibly scattered lesions, with perhaps a tendency to coalescence, and the hands are desquamating as well as the feet.

Next look for **mucous tubercles** about the anus, the angles of the mouth, the outer canthi, and in moist situations. Mucous tubercles about the anus may be the only cutaneous signs of congenital syphilis. Look for polymorphism; some areas are macular, others are distinctly raised, others are covered by branny scales, perhaps there are cutaneous gummata, perhaps **alopecia** (loss of eyebrows, or eyelashes, or hair in circumscribed patches or covering large areas, and not confined to the back of the head or head-rolling area). Observe the tendency to cracks and fissures about the mouth, which later on will appear as **typical radiating scars**, and mark the inherited vice. Secondary suppuration may take place in any syphilitic rash, but do not

forget the **pustular syphiloderm**, which is not unlikely to be mistaken for **impetigo contagiosa**. A favourite situation is the face and head. There is somewhat similar crusting, but the crusts are seated on infiltrated copper-coloured bases, within some lesions underlying ulceration.

Cutaneous gummata (blind boils) occur singly or in twos and threes, or in quite large numbers. In the former case they may be associated with maculo-papular eruptions, but in the latter event they are usually alone. They are round cutaneous lumps **more readily felt than seen**, pale or red in colour, perhaps vesicle or pus tipped; they subsequently form quasi-abscesses, which discharge through a small orifice. They have no cores, and are essentially chronic in their course. When numerous they are sometimes associated with a vesicular eruption.

Syphilitic pemphigus is not common. Separate it from **bulloous impetigo contagiosa** arising in the new-born. The syphilitic bulla attacks in preference the soles and palms, but it is not confined to these situations. The lesions arise on copper-coloured infiltrated bases, and on rupture leave crusts and ulcers.

Syphilitic tubercles and cutaneous gummatous ulcers are later manifestations, and occur in older children; they exhibit the same appearances as seen in acquired syphilis, and are non-symmetrical.

Erythema Neonatorum. Infants after birth become red and desquamate. The process may resemble by reason of the redness and the intensity of the desquamation scarlet fever, but it is a-pyrexial (*dermatitis exfoliativa neonatorum*). Syphilitic desquamation occurs after the first month and is much more prolonged.

Condylomata ani. The moist, warty-looking and cauliflower-like excrescences about the anus of children a year or more old are not uncommon; they are readily cured by dusting with calomel.

In all cases look for the associated signs of congenital syphilis and **examine the infant thoroughly**; syphilis is often very difficult to detect.*

In private practice be most careful about making too pointed enquiries; make your diagnosis on your examination and do not rely upon a history, which is apt to be

* Those interested can obtain full details in "Syphilis of Children," by the author.

misleading. By directing your questions ostensibly towards the history of tubercle you may be able to elicit facts suggestive of syphilis.

URTICARIA.

The eruption in infants and young children is scattered and papular (*Urticaria papulosa, lichen urticatus*), the papules being more or less shot-like in feel, pale or pale red in colour, with a tendency to invade the hands and feet, but all parts suffer. Here and there wheals may be seen, but they are often not to be found. Look for scratch marks and blood-tipped papules. In acute cases expect vesicles and pustules (*urticaria vesiculosa and pustulosa*) and possibly pyococcal dermatitis. Separate from scabies, to which it bears a strong resemblance, and with which it may co-exist (see page 154). The wheal is the initial lesion, the papules can be seen in the interior of these. To treat successfully—(1), prevent scratching and remove all source of local irritation; (2), soothe the irritable skin and heal it when necessary; (3), remedy dyspepsia and constipation, and find out if any article of diet is at fault. For the itching dab on the skin the following lotion:

alcoholic solution of coal tar $7\frac{1}{2}$ minims, diluted solution of subacetate of lead 1 fluid drachm, elder flower water up to 1 fluid ounce. If at the breast and if bottle-fed feed properly, see Feeding of Infants (page 13). Intestinal antiseptics are valuable in young children.

Urticaria in older children does not differ from that of adults.

ERYTHEMA.

Simple erythema in children is important by reason of the danger of mistaking the condition for scarlatina or German measles, and perhaps measles, but chiefly scarlatina and *vice versa*. To determine its nature bear in mind the various agencies, haemic and local, which may produce the condition.

These agencies are—(1), the specific fevers other than scarlatina and rubella; (2), various drugs and serums; (3), topical, *e.g.*, wet napkins, retained secretions (intertrigo) and mustard plasters, etc.; (4), the absorption of poisons from the throat and gastro-intestinal tract, auto-intoxication; (5), enemata; (6), rheumatism, pneumonia and meningitis, tuberculous, simple,

and cerebro-spinal; (7), septicæmæla, pyæmia and empyeina; (8), physiological, in sequence to birth, *vide erythema neonatorum, syphilodermia*, page 156.

Roseola Infantilis is characterised by variously shaped patches and blotches of redness usually somewhat resembling measles. The fugacious character of these symptomatic rashes then disappears within 24 hours or so, and the absence of tonsillitis excludes scarlatina. Sewer air poisoning produces tonsillitis and an erythematous or papular rash, and the nature of the illness should be suspected if the condition is frequently recurring. Furfuraceous desquamation may occur after symptomatic erythema, but extensive peeling of the hands and feet, in the absence of syphilis and dermatitis exfoliativa neonatorum in infants, which must be excluded, denotes scarlatina.

ERYTHEMA MULTIFORME.

This is important from the fact that it arises in rheumatic children, it is seen associated with rheumatism, and when encountered it should suggest rheumatism. Examine the heart and treat by salicylates.

ERYTHEMA NODOSUM.

This is not confined to the shins in children, nor are the nodes in their case quite so characteristic or so painful. It is also seen on the calves and thighs, and sometimes on the forearms and arms, and it may be associated with erythematous lesions elsewhere. There is more constitutional disturbance with it than with erythema multiforme. When seen it should suggest rheumatism, examine the heart and prescribe salicylates.

DRUG ERUPTIONS.

Remember drugs are apt to induce various skin eruptions, and the following should be borne in mind.

Erythematous and Scarlatiniform—
Antitoxin, quinine, belladonna, atropine and haematropine eye drops, salicylic acid and the salicylates, copaiba, arsenic, and chloral.

Measly—Antipyrine, phenacetin, antitoxin, salicylic acid and the salicylates, and copaiba.

Urticular—Antipyrine, phenacetin, salicylic acid and the salicylates, quinine, and copaiba.

Acneform—Bromides and iodides.

Purpuric—Chlorate of potassium, quinine, and phosphorus.

Purpura—Antipyrine, bromides, arsenic, and iodides.

Pigmental—Arsenic and nitrate of silver.

Vesicular (Shingles)—Arsenic.

Fungating—Bromides.

HERPES.

Shingles in children is characterised by the small amount of discomfort it usually creates; pain is usually trifling, and may occur before and during the attack. Think of **Arsenical Neuritis**, and remember it occasionally arises in **Spinal Caries**. Protect the vesicles from rupture and prevent friction.

Systematic Herpes is very common on the face in sequence to pneumonia, coryza, pharyngitis and tonsillitis, bronchitis, tooth-ache, and gastro-intestinal disturbances. Its importance is due to the fact that it may originate **pyococcal dermatitis**.

CHILBLAINS.

(ERYTHEMA PERNIO.)

The rules for prevention and treatment are—(1), well-aired woollen underclothing and well-fitting shoes; keep the socks dry and change the shoes several times a day; (2), plenty of healthy out-door exercise; (3), in the early stages paint them with tincture of iodine, or use equal parts of red oxide of mercury ointment and vaseline, to be well rubbed in, or some other stimulant; (4), allay itching with cocaine ointment: (5), if ulceration has occurred, rest and the application of metallic ointment.

MILIARIA.

Sudamina are not uncommon when profuse sweating occurs. Should the sweat glands inflame, a red halo surrounds the sudamina (**miliaria rubra** or **red Gum**). In **miliaria papulosa** (**prickly heat**) the papules are bright red and closely set, and may become vesicular or pustular. Use boric acid and starch powder in equal parts, and suitably clothe the children.

MOLLUSCUM CONTAGIOSUM.

The tumours are small, the size of a split pea more or less, sessile, white waxy to pink in colour, presenting a central dimple the orifice of a follicle, and they mostly occur on the face.

Treatment :—Enlarge the orifice, squeeze out the gland-like growth (molluscum corpuscle) and well rub the inside of the sac with nitrate of silver.

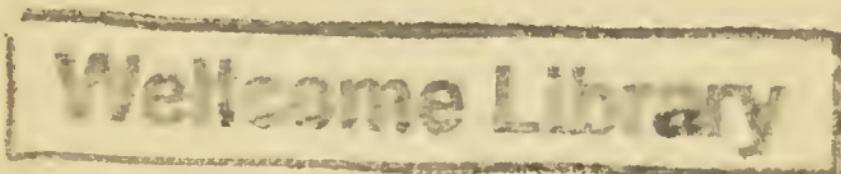
ŒDEMA NEONATORUM.

This may be due to—(1), Renal Disease ; (2), fœtal endocarditis ; (3), marasmus ; (4), congenital syphilis.

The dropsy begins in the lower extremities and may become general. The skin is pale and **always pits on pressure**. Separate from **sclerema neonatorum**, in which there is an overgrowth of connective tissue ; here the skin is pale, subsequently yellowish, hard and leathery, and does not pit on pressure. The temperature is subnormal in either case. Treat symptoms.

Separate from another not uncommon condition which **resembles sclerema** ; in

this there are indurated raised raw-ham coloured patches, usually somewhere about the napkin area, which do not pit on pressure, and do not alter much in colour, and which usually disappear in a week or two.



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